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WILD FLOWERS

OF THE

UNDERCLIFF, ISLE OF WIGHT

CHARLOTTE O'BRIEN & C. PARKINSON

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WILD FLOWERS

OF THE

UNDERCLIFF.

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WILD FLOWERS

OF THE

UNDERCLIFF, ISLE OF WIGHT.

BY

CHARLOTTE O'BRIEN

AND

C. PARKINSON, F.G.S.

London:

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PREFACE.

THE following pages are not intended to compete with the many standard works on the British Flora, or with the comprehensive volume written by Dr. Bromfield on the Flora of the Isle of Wight in particular. Their object is simply this,—to enable temporary residents in the Undercliff to become acquainted with the wealth of wild flowers in the immediate neighbourhood, by pointing out the localities in which the different species may be found, and the time of year when they are in bloom. For the latter purpose a concise Floral Calendar is supplied, giving the names of all the rarer kinds of wild pla ts which may be successfully sought for in the different months.

As a rule they are very timid, these "wildings of Nature," and recede before the advances of man and his bricks and mortar! so that every year, as our town increases, one has to go farther to seek for them. Less than twenty years since water-cresses could be gathered in a little stream which flowed peacefully through Church Street, and the Bee Orchis fringed the Cliff path at the foot of the Bath Road. "*Tempora mutantur!*"

How frequently have we heard it said, "I am told there are eleven different species of the Orchid tribe

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growing in the Undercliff, if I only knew where to look for them!"

It is to help such seekers after one of the purest of earthly pleasures that this little book is written; and it will be considered to have fulfilled its mission if it succeeds in providing a definite and healthful object for the daily walk, when, perchance, the peaceful floral trophies gathered by loving hands from wood and field may rejoice the heart and gladden the eyes of some beloved invalid at home.

One word as to the title. "Wild Flowers of the Undercliff *and its Vicinity*." It was found that to limit the range of this little guide to the *Undercliff* would be to exclude *two* of the most famous botanical "hunting-grounds" in the Island, namely the Wilderness at Rookley, and St. Helen's Spit—the former within an hour's drive from Ventnor, the latter about two miles' walk from Brading Station.

And yet another word—a *post scriptum* on behalf of the wild flowers themselves. We would ask our readers, as a rule, to be content with gathering the *blossoms*, without attempting to take the *roots*. Scarcely one per cent. of the plants so carried away survive their exile. The Habenaria viridis and the Ophrys aranifera may be instanced as examples of almost complete extermination from the Island in consequence of the ruthless carrying away of plants *only to die!*

The Coloured Drawings have been executed by Miss Parkinson, to whom the cordial thanks of the authors are due.

VENTNOR, 1880.

ILLUSTRATIONS.

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WILD FLOWERS

OF THE

UNDERCLIFF AND ITS VICINITY.

Order I.—RANUNCULACEÆ. *Crowfoot tribe.*

Sepals generally 5; petals 5 or more; stamens inserted on the receptacle, differing in number; ovaries numerous; fruit consisting of several one or many-seeded carpels.

The Ranunculaceæ comprise an extensive division of thalamiflorous plants, of which the genus Ranunculus is the type. It comes first in the natural orders, which is unfortunate for students commencing Botany, as a number of genera are included, differing widely in the ordinary characteristics of a flower, but associated together on account of the structure of the carpels. For the most part they are hardy, herbaceous plants, ranging over the greater part of the world, but most abundant in Europe. They are remarkable for their dangerous acridity, not a few being powerfully caustic, some even poisonous. The Aconites and Hellebores are powerful medicines, but dangerous in unskilled hands. It is the Aconitum (Monkshood) which has frequently been mistaken for horse-radish, and

eaten as such with fatal results. Professor Bentley has pointed out how easily the roots may be distinguished; while the horse-radish tapers to a point, the Monkshood is cut off short. A little care and observation will effectually prevent such mistakes.

CLEMATIS.

Generic character. Sepals 4—6; corolla wanting; carpels one-seeded, terminating in cotton-like tails.

1.—**C. Vitalba.** A climbing shrub, common on chalk; flowers greenish-white, easily identified when seeding by the cotton-like carpels. Hedges by the road-side, St. Lawrence, &c.

THALICTRUM.

Sepals 4—6; corolla wanting. Carpels without down, one-seeded.

1.—**T. flavum.** (Yellow Meadow Rue.) Stem erect, branched; leaves doubly pinnate; flowers small and dense. Rare; a single specimen found towards the end of June, 1879, in a ditch close to Rookley.

ANEMONE.

Sepals and petals 5—15; involucre of three cut leaves; carpels one-seeded.

1.—**A. nemorosa.** (Wood Anemone.) The early spring flowers, which, with blue-bell and primrose, carpet our wood.

ADONIS.

Sepals 5; petals 5—10; without a nectary at the base; carpels one-seeded and not downy, forming an ovate head.

1.—**A. autumnalis.** (Pheasants' Eye.) Not a native species; plant herbaceous with cut, feathery

leaves, and bright scarlet flowers. "Corn-fields above Pelham Woods" (Venables).

RANUNCULUS.

Sepals usually 5; petals 5, occasionally more; a nectary at the base; carpels one-seeded. There are thirteen species in the island, of which we describe the more uncommon forms.

1.—**R. aquatilis.** (Water Crowfoot.) Stem submerged; lower leaves deeply cut and feathery, upper ones floating, three-lobed. A very variable plant in ponds or streams; flowers white. Chale, Sandown, and Brading.

2.—**R. hederaceus.** (Ivy Crowfoot.) Leaves all rounded and lobed; petals small; stamens 5—10. In similar situations.

3.—**R. auricomus.** (Goldilocks.) Leaves smooth, lower ones kidney-shaped, upper ones deeply cleft; petals irregular; flower small and yellow. Rew Wood, Ventnor.

4.—**R. sceleratus.** (Celery-leaved Crowfoot.) Leaves smooth, cut into segments; stem hollow, juicy; carpels in oblong head. Yellow, inconspicuous flower, 1—2 feet high. Sandown Marshes.

5.—**R. hirsutus.** (Pale hairy Buttercup.) Calyx reflected; root fibrous; carpels rough and warty. Yellow. Bembridge.

R. flammula (Lesser Spearwort) is common in Godshill Park Marshes. It is easily known by its narrow, straight leaves. R. ficaria (Lesser Celandine is common in every field. R. acris (Upright Crowfoot) has a spreading calyx, and is common in meadows. R. repens (the Creeping Buttercup) is plentiful on Ventnor

Downs. R. arvensis (Corn Crowfoot) is common in corn-fields about Wroxall and elsewhere.

MYOSURUS.

Sepals 5, elongated; petals 5 or more, very narrow; carpels one-seeded, in a dense spike.

1.—**M. minimus.** (Common Mousetail.) A small annual, 3—6 inches high; the ripe carpels supposed to resemble a mouse's tail. Bank End Farm, St. Lawrence (Dr. Martin), field above Shanklin Chine (Bromfield).

CALTHA.

Sepals and petals 5 or more; carpels many-seeded.

1.—**C. palustris.** (Marsh Marigold.) An early spring flower, with shiny dark leaves. Common by the side of any stream. Flowers large and yellow. Sandown Marshes, Wroxall.

HELLEBORUS.

Sepals 5, persistent; petals small, tubular; carpels 3—10.

1.—**H. fœtidus.** (Stinking Hellebore.) Sepals converging; leaves evergreen, not divided to the centre; greenish colour; a doubtful native. Among the ruins at Wolverton. Rare. February. This is allied to the well-known Christmas Rose.

DELPHINIUM.

Sepals 5, soon falling off, the upper one helmet-shaped, with a long spur; nectaries two-stalked, partly tubular and concealed; carpels 3—5.

1.—**D. Consolida.** (Field Larkspur.) Closely resembling the garden species, and a doubtful native; stem erect, branched; flowers in a loose raceme. Corn-fields above the Undercliff (Bromfield), near Blackgang.

Order II.—PAPAVERACEÆ. *Poppy tribe.*

Sepals 2, soon falling off; petals 4; ovary 1; stigma lobed; capsule one-celled; many-seeded; strongly narcotic; leaves alternate.

The Papaveraceæ are herbaceous, thalamiflorous plants, with solitary or cornate carpels. They are highly narcotic, the capsules of some species yielding opium. A few species give an oil. But poppies are mostly looked upon as troublesome weeds among corn. As a fomentation, a solution of poppy-heads has long been used. These are obtained from P. somniferum. The yellow-horned poppy is one of the characteristic plants of the Undercliff, very common on the face of the chalk cliffs. The capsule of the true poppy genus is full of minute round seeds, which escape when ripe through small perforations under the stigma. In all plants of this order the sepals of the calyx are deciduous, that is, falling off as the flower expands.

PAPAVER.

Stigma spreading; capsule opening by pores.

1.—**P. Argemone.** (Long rough-headed Poppy.) Capsule club-shaped; bristles erect; leaves doubly pinnate; a small plant; petals scarlet, black at the centre. Corn-fields by the footpath between Sandown and Shanklin.

2.—**P. hybridum.** (Round rough-headed Poppy.) Capsule globular; bristles spreading; leaves doubly pinnate; deep scarlet. Chalky corn-fields between Ventnor and Niton.

3.—**P. dubium.** (Smooth-headed Poppy.) Capsule oblong; bristles adhering; leaves doubly pinnate; scarlet. Shanklin Chine, corn-fields near Sandown.

4.—**P. Rhœas.** (Common Poppy.) Capsule globular; bristles spreading; leaves pinnate and cut; scarlet, often black at the base. Every corn-field.

5.—**P. somniferum.** (White Poppy.) Capsule globular; plant not having bristles; glaucous. Ventnor and Steephill.

It should be noted that in all the Poppy family the calyx falls as the flower expands.

GLAUCIUM.

Stigma two-lobed; capsule pod-like, two-celled.

1.—**G. luteum.** (Yellow-horned Poppy.) Leaves embracing the stem; glaucous; pod conspicuous; large yellow flowers. Not uncommon on the sea-cliffs, Bonchurch, Ventnor.

CHELIDONIUM.

Stigma two-lobed; capsule pod-like, one-celled; seeds crested.

1.—**C. majus.** (Common Celandine.) Occasionally found in waste places near Ventnor. Flowers small, yellow and in umbels; leaves indented and light-green. Remarkable for the orange juice secreted in the stem.

Order III.—**FUMARIACEÆ.** *Fumitory tribe.*

Sepals 2, deciduous; petals 4, irregular; stamens 6, in two sets of four and two; ovary one-celled; style thread-like; stigma lobed; juice not milky.

FUMARIA.

Petals 4, one swelling at the base; vessels one-seeded.

1.—**F. capreolata.** (Rampant Fumitory.) Sepals

GLAUCIUM LUTEUM *(P.6.)*

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as broad as the corolla, and half as long; fruit notched; a plant which climbs by means of a twisted leaf-stalk; flowers pale pink or creamy white. Very common. Ventnor, Shanklin.

2.—**F. officinalis.** (Common Fumitory.) Differs from the preceding in having sepals narrower than the corolla; fruit not notched; rose colour; erect. Very common.

CORYDALIS.

Petals 4, one being spurred; seed-vessel one-seeded.

1.—**C. claviculata.** (Climbing Corydalis.) Stem climbing; leaves pinnate, with tendrils; flowers in clusters, small yellowish-white. Sandown, Lake Common. Abundant.

Order IV.—**CRUCIFERÆ.** *Cruciferous tribe.*

A very difficult class of plants to obtain any thorough acquaintance with, embracing a great number of species. The tribe is divided into two main divisions by the characteristics of the seed-vessels: (1), seed-vessel, a pouch (silicle) or short pod; (2), seed-vessel, a silique, or long pod. This division should be clearly realized.

2500 species of Cruciferous plants have been described, about 800 of which are indigenous to Great Britain. Four-fifths of the known species grow in the temperate zones, impatient alike of torrid heat or arctic cold. They all have four petals, cross-shape, and six stamens. They are divided into two sub-orders, according to the shape of the seed-vessel, which is invariably either a long pod or a short round pouch. A pungent volatile and oily principle pervades

the Cruciferæ, agreeable to the taste if contained in moderate quantities, as in mustard or horse-radish, but violent in action if present in excess. All Cruciferous plants which have a succulent and sappy character are edible, as the cabbage, radish, and turnip. Others are ornamental garden plants, as stocks, wallflowers, candy-tufts, and rockets. White or yellow are the prevailing colours in the order. Matthiola incana (the Sea Stock) is a rare species, not uncommon on the chalk cliffs of the Isle of Wight; and Brassica oleracea, the origin of all garden cabbages, may be found sparingly on the red cliffs at St. Lawrence.

(1.) *Plants with Silicle.*

Petals 4, cross-ways; stamens 6,—2 short, 4 long; at the base of the stamens two honey-secreting green glands.

CAPSELLA.

Pouch inversely heart-shaped, flat; valves keeled, not winged; seeds numerous.

1—**C. Bursa-pastoris.** (Shepherd's Purse.) Plant hairy; stem leaves arrow-shaped and toothed. A common weed.

LEPIDIUM.

Pouch rounded; valves keeled; cells one-seeded; petals equal.

1.—**L. campestre.** (Field Pepperwort.) Leaves downy; pouch rough, with scales; style short. In cultivated fields or waste places, especially near Ryde, but not uncommon in other localities.

2.—**L. Smithii.** (Smooth Pepperwort.) Leaves downy; pouch not scaly; style long. A white flower in both species. A hedge plant, especially near Ryde.

COCHLEARIA.

Pouch globose; valves not flattened; one-nerved; seeds numerous.

1.—**C. officinalis.** (Common Scurvy Grass.) Root-leaves heart or kidney-shaped; sessile, toothed at the base; all fleshy; branched, with corymbs of white flowers. Muddy sea-shore; Bembridge Harbour.

2.—**C. grœnlandica.** (Greenland Scurvy Grass.) Pouch globose; leaves kidney-shaped, fleshy, entire, white. Freshwater.

3.—**C. anglica.** (English Scurvy Grass.) Pouch elliptical, veined; root-leaves oblong, entire, stalked; stem-leaves sessile and toothed. A slender plant. Brading Harbour.

4.—**C. danica.** (Danish Scurvy Grass.) Pouch ovate, veined; leaves all stalked, and nearly triangular; white. St. Helen's Spit.

DRABA.

Pouch oval or oblong; valves convex; seeds many, in two rows.

1.—**D. verna.** (Common Whitlow Grass.) Scapes leafless; petals deeply-cleft; flowers white. A very insignificant little plant found at St. Helen's Spit.

CAKILE.

Pouch angular, with a joint; lower division with seed attached, the upper having seed erect, which soon falls off.

1.—**C. maritima.** (Purple Sea-rocket.) A bushy plant with zigzag stem; leaves glaucous, cut, and fleshy; corymbs of lilac flowers. Abundant in Sandown Bay.

CRAMBE.

Fruit without valves; pouch two-jointed; upper cell with pendant seed; lower joint seedless.

1.—**C. maritima.** (Sea-kale.) Identical with our garden species. A very rare species found only at Norton.

SENEBIERA.

Pouch two-lobed, rough; cells one-seeded. (Coronopus of Bromfield).

1.—**S. coronopus.** (Wart Cress.) Pouch undivided, having little sharp points; style prominent; trailing stems with whitish flowers. St. Helen's Spit. Common.

(2.) *Pod, a long silique for seed-vessel.*

CARDAMINE.

Pod lineal; valves flat, nerveless; seeds in a single row on thread-like stalks.

1.—**C. pratensis.** (Common Ladies' Smock.) Leaves pinnate, without stipules; root-leaves roundish; style straight; flowers pinkish white. Well known as the Cuckoo flower. Common in all damp fields.

2.—**C. hirsuta.** (Hairy Bitter Cress.) Leaves pinnate, without stipules; leaflets stalked and toothed; pods erect. Has been used as a salad. Hedgebanks; moist and shady places.

BARBAREA.

Pod lineal, four-angled; valves with nerve; seeds in a single row; calyx erect.

1.—**B. vulgaris.** (Common Winter Cress.) Lower leaves lyrate; the terminal lobe roundish, upper ones toothed; leaves dark green; stem angular; flowers

bright yellow. Marshy ditches, Sandown, Alverstone. Not uncommon.

2.—**B. præcox.** (Early Winter Cress.) A more slender species, with very narrow leaves; biennial, whereas the first species is perennial. Landguard Farm, Shanklin; fields sometimes yellow with it.

NASTURTIUM.

Pod nearly cylindrical, short; valves convex, nerveless; seeds irregularly placed in two rows; calyx spreading.

1.—**N. officinale.** (Water Cress.) Leaves pinnate, roundish, and toothed. In streams and ponds; abundant.

2.—**N. terrestre.** (Marsh Cress.) Petals yellow; pods oblong. A rare species; Sandown Marshes.

SISYMBRIUM.

Pod rounded or angular; valves convex, nerves 3; stigma entire; seeds in a single row, not striated.

1.—**S. officinale.** (Hedge Mustard.) Pods downy, pressed to the stem; leaves hairy, lobed, pointed backwards; stem rough; small yellow flowers. Very common.

2.—**S. Thalianum.** (Wall Cress.) Leaves oblong, toothed, hairy; stem branched; pods angular, very long; minute white flowers. Common on any dry bank.

ALLIARIA.

Pod round, long, and lineal; valves three-nerved; seed striated.

1.—**A. officinalis.** (Garlic Mustard.) Leaves oblong, toothed; stem branched; minute white flowers. Common in hedges.

CHEIRANTHUS.

Pod flattened; valves with a nerve; stigma of two spreading lobes; calyx erect, opposite sepals swelling.

1.—**C. Cheiri.** (Wallflower.) The true wild species has yellow flowers only, leaves narrow, and at alternate angles up the stem. It is not certain that this has yet been detected on the Undercliff. Cliffs between Ventnor and Niton are the most likely situations. All coloured varieties spring from this species.

MATTHIOLA.

Pod cylindrical; stigma converging; seeds with a membranous edge.

1.—**M. incana.** Stem shrubby, hoary, with down; pods without glands; flowers light purple, fragrant at night. One of the characteristic plants of the island, and extremely rare in other parts. Steephill and Bonchurch cliffs, usually in inaccessible positions on the chalk.

BRASSICA.

Pods cylindrical, beaked; valves one-nerved; calyx erect; seeds in a single row.

1.—**B. oleracea.** (Sea Cabbage.) Root fleshy; leaves smooth, glaucous, lobed; a handsome pale yellow elongated corymb of flowers, almost as striking as a laburnum. The cliffs just below the Consumptive Hospital.

2.—**B. Rapa.** (Rape.) Leaves glaucous on the under side; pods spreading. Common in cultivated lands, but not considered a true native.

SINAPIS.

Pod cylindrical, tapering, beaked; valves three or five-nerved; seeds globose, in a single row; calyx spreading.

1.—**S. nigra.** (Black Mustard.) Pods four-sided, smooth, converging to the stem; leaves pointed, entire, smooth; a tall species with small yellow flowers. The black seed yields the mustard of commerce. Foot of Shanklin Chine.

2.—**S. arvensis.** (Charlock.) Pods glabrous, with many angles; rugged; leaves toothed, rough; yellow. A common weed in corn-fields.

RAPHANUS.

Pod without valves, swollen, imperfectly jointed; seeds globular; calyx spreading.

1.—**R. maritimus.** (Sea Radish.) Straw-coloured flowers, but often fading to white; leaves in alternate large and small pairs. The small cove next to Steep-hill, growing in the sand, although Mr. F. Moore, F.L.S., has stated, in "Venables' Guide," it does not grow in sand.

Order V.—**RESEDACEÆ.** *Rocket tribe.*

RESEDA.

Sepals 2—4, narrow; petals unequal, fringed; stamens 10—24, inserted on the disk; stigmas 3; ovary three-lobed, one-celled; seeds in three rows.

Reseda is a genus of thalamiflorous plants, nearly allied to the Cruciferæ, but differing from them in the stamens, being indefinite and the capsules having only one cell; so it constitutes an order of its own under the name of Resedaceæ. Only one species indigenous in Britain, the Reseda luteola (Dyer's Weed); the well-known fragrant annual (Reseda odorata) being a native of Egypt, whence it was introduced into Britain in 1752, and has long been a

universal floral favourite. The Dyer's Weed is a biennial, indigenous, agricultural plant of the mignonette genus. It bears also the popular names of Weld, Wold, Yellow-weed, and Dyer's Rocket. It grows wild on waste grounds, particularly amongst the rubbish of coal-pits and quarries, and is cultivated in the vicinity of manufacturing towns for the sake of its dye, which is bright yellow, but is exceedingly fugitive, and requires to be fixed with some such mordant as alum and tartar. As an agricultural plant it gives comparatively little trouble, and will flourish on almost any kind of soil, although most luxuriant on a rich loam. It was formerly cultivated to a much greater extent in Britain than it is at present, but it is still considered a valuable dye-stuff, and large quantities are imported from France.

1.—**R. Luteola.** (Dyer's Rocket.) Leaves narrow, undivided; calyx four-parted; 2—3 feet high; a plant with shiny leaves and yellowish spike of flowers. Chalk cliffs, Ventnor.

2.—**R. lutea.** (Wild Mignonette.) Leaves three-cleft, lower ones pinnatifid; calyx six-parted; petals 6, unequal; more bushy than the last. Chalk cliffs, Ventnor; Niton, not so common.

Order VI.—CISTACEÆ. *Rock Rose tribe.*

Sepals 5, unequal, the inner ones twisted in the bud; petals 5; stamens numerous; ovary single; stigma simple; capsule 3—5, rarely ten-valved; plant shrubby.

The beautiful but fragile order Cistaceæ comprises some 200 species, divided into four genera. Cistus creticus and ladaniferus produce the gum ladanum of

commerce. It is gathered in Candia from the stems of the plants by means of leather-toothed rakes. They are mostly prolific in flowers, which, however, only last one day, and open only in sunny weather. They vary greatly in colour, being rose, white, yellow, mottled chocolate and white, &c. Many handsome shrubs in the Cistus order have been introduced into England.

HELIANTHEMUM.

Two outer sepals sometimes wanting; leaves with fringed stipules.

1.—**H. vulgare.** (Rock Rose.) Leaves oblong, hoary beneath; bright yellow flowers, which expand only in sunshine. Chalk and hill pastures. Plentiful on Ventnor Downs.

Order VII.—**VIOLACEÆ.** *Violet tribe.*

Sepals 5; petals 5, not always equal; stamens 5; anthers flattened; style with hooded stigma; ovary one-celled, many-seeded.

The Violaceæ differ from the Droseraceæ on account of their stipulate leaves, solitary style, and lengthened embryo. The majority of the species are inhabitants of a cold or temperate climate, some being found only at great altitudes. Many beautiful hybrids of the Pansy tribe are common in our gardens. There are about nine species indigenous to Britain, more than 150 in foreign countries. The chief medical properties of the order are emetic, principally extracted from the root. Viola odorata (sweet violet) is of two varieties, blue and white; the white only is common in the south, the blue apparently more plentiful in the mid-

lands. In the Isle of Wight a scented blue violet really wild is rare.

VIOLA.

Sepals extended at the base; petals unequal; anthers united into a tube; capsule three-valved.

1.—**V. hirta.** (Hairy Violet.) Leaves heart-shaped and rough; hairy; bracts below the middle of the flower-stalk; sepals obtuse; lateral petals, with hairy line; scentless; blue. Woods and hedgerows frequent.

2—**V. odorata** .(Sweet Violet.) Leaves heart-shaped, downy beneath; bracts above the middle of the flower-stalk; scions creeping; commonly white, rarely blue in the Undercliff. Landslip; Woods opposite Mirables.

3.—**V. palustris.** (Marsh Violet.) Leaves entirely smooth, rather kidney-shaped; spur very short; root creeping, but no scions; leaves light green; flower pale lilac, with veins. Rare. Bogs near Alverstone; Rookley.

4.—**V. canina.** (Dog Violet.) Stem ascending; leaves acute; sepals acute; stipules long, toothed; bracts entire; flowers pale blue, large, and scentless. Common in woods everywhere.

5.—**V. tricolor.** (Pansy.) Stem angular, branched; leaves oblong; stipules deeply cut; yellow, or white and blue. Cultivated fields.

ORDER VIII.—**DROSERACEÆ.** *Sundew tribe.*

Sepals 5, equal; petals 5; stamens either same number or a multiple of it; styles 3—5; capsule 1—3 cells, 3—5 valves.

The Sundew (Drosera) is a beautiful and interesting genus of plants of the natural order Droseraceæ. The species inhabit marshes or inundated lands in all temperate regions of the world, and are very singular in structure. All parts of their foliage have an abundance of glandular hairs, which bear at their extremity viscid glands; and the irritability of these glands causes them to contract and fold up when touched, so that insects are imprisoned in their leaves. Many interesting experiments have lately been made by Mr. Darwin and Sir John Lubbock with regard to the insect-catching properties of the Sundew, and they seem to prove beyond a doubt that the plant has need of extraneous nourishment beyond what it derives from the soil in which it grows, and which is generally poor in quality, and that the imprisoned insects serve it for food. The whole plant is intensely acrid, and will curdle milk; and it is supposed that this acrid secretion acts as a sort of *digestive*, preparing the animal substance for the use of the plant. Leaves of the Sundew have been found containing the entire *skeletonized* insect entangled in the glandular hairs. Only three of the true Sundews occur *wild* in Britain. They grow but a few inches high. The leaves, springing from the root, spread out in a rosette, from the centre of which springs the flower stem, with a raceme of white flowers all on one side.

DROSERA.

Stamens 5; leaves clothed with glandular hairs; leaves alternate; flower stalks curled when in bud; seldom found with flower expanded.

1.—**D. rotundifolia.** (Round-leaved Sundew.)

Leaves all from the root; leaf-stalks hairy; 2—6 inches high; leaves covered with red hairs; flowers insignificant, white. The action of the sun causes viscid drops to exude from each red hair, by means of which insects are caught. Darwin has shown how the plant derives its nourishment by these means, and has made many curious experiments to prove this. Rookley Wilderness; Lake Common. The other two species of Drosera, differing chiefly in the shape of the leaves, are likely to be found in similar situations.

ORDER IX.—**POLYGALACEÆ.** *Milkwort tribe.*

Sepals 5, 2 larger than the rest; petals 3—5; stamens 8, in two equal sets; anther one-celled; pistil 1; capsule 1—3, seeds hanging.

POLYGALA.

Inner sepals coloured; petals joined to the filaments; capsule flattened, two-valved, seeds downy.

1.—**P. vulgaris.** (Milkwort.) Lower petal crested; calyx wings equal to the corolla; 3 bracts at the base of each flower; stem ascending; leaves narrow; three varieties—blue, pink, and white. Common on the chalk downs.

ORDER X.—**FRANKENIACEÆ.** *Sea Heath tribe.*

Sepals 4—5, united in a tube, not falling off; petals equal to the sepals, usually having scales; stamens 4—5; ovary 1; style four-cleft; capsule one-celled, three or four-valved, seeds minute.

FRANKENIA.

Lobes of style oblong, with stigma on the inner side.

1.—**F. lævis.** (Smooth Sea Heath.) Leaves narrow, rolled back at the edges; flowers terminal, or from the axils of the stem, procumbent; rose colour. Muddy salt marshes, St. Helen's.

ORDER XI.—**CARYOPHYLLACEÆ.** *Chickweed tribe.*

Sepals distinct 4—5, sometimes connected with the tube; petals equal to the sepals; stamens either same, or twice the number; ovary 1; stigma 2—5; capsule 1 (usually) two or five-valved, seeds on a central column.

There are twenty-six genera in the natural order Caryophyllaceæ. The genus Silene merits attention because of the insect-catching powers of many species. The stem of the German, Nottingham, and Spanish catchflies is viscid or sticky with a fluid contained in the plant, and emitted through hairy glands. Small insects are securely caught in this manner, from which the plant probably derives nourishment.

Arenaria rubia, one of the sandworts, appears to obtain nourishment from fragments of silex blown over the plant by the wind. It grows only in situations where such conditions are inevitable. Microscopic observation will show minute grains of sand adhering to the tubular hairs, and in the very tubes; further than this, a section, either transverse or longitudinal, reveals silex in the very cells. There is nothing very improbable in this if we consider how the catchflies and other plants feed on insects, only it is mineral support the arenaria requires, like the barley, which obtains silex through the roots.

Caryophyllus, or the Clove-tree, is an evergreen tropical spice-tree, a native of the Moluccas. Its stem is hard, with a smooth bark similar to a beech. The un-

expanded flowers or calices previous to the development of the petals form the cloves of commerce. Shaken down from the tree, they are immediately immersed in boiling water, exposed to heat and smoke, and spread out to dry in the sunshine. An aromatic oil is also distilled from cloves.

(1.) SILENEÆ.

Sepals connected in a tube; stamens united at the base with the stalk of the ovary.

SILENE.

Calyx five-cleft; petals 5, with claws; stamens 10; styles 3; capsule three-celled, 6 valves.

1.—**S. inflata.** (Bladder Campion.) Erect; leaves tapering; flowers in drooping panicle; calyx curiously inflated, veined; white petals deeply cleft, rarely crowned. Very common.

2.—**S. maritima.** (Sea Campion.) Also with inflated calyx; stem creeping; leaves toothed; leaves of very different texture to the last, owing to the presence of alkaline salts; quite a distinct species. St. Helen's Spit, uncommon.

3.—**S. nutans.** (Nottingham Catchfly.) Flowers all hanging one way; branches three-forked, opposite; calyx swollen; petals cleft and crowned; 1—2 feet high, expands at night. St. Lawrence, Sandown Cliffs; rare; white.

4.—**S. noctiflora.** (Night-flowering Catchfly.) Erect and forked; calyx toothed, ten-ribbed; expand at night, and are fragrant. Upper Cliffs, St. Lawrence; rare; white.

5.—**S. anglica.** (English Catchfly.) Hairy and

viscid; leaves narrow; flowers lateral, erect, and alternate; petals crowned; 6—12 inches high; pinkish white. Neighbourhood of Shanklin.

LYCHNIS.

Calyx five-cleft, naked at the base; petals 5, with claw; stamens united at the base to the ovary; styles 5; capsule 5—10 teeth.

1.—**L. Flos-cuculi.** (Ragged Robin.) Petals deeply cleft, crowned; capsule five-toothed; leaves narrow; flowers pink; in loose panicle. Common in damp situations.

2.—**L. diurna.** (Red Campion.) Stamens and pistils produced on different plants; petals two-cleft, crowned; capsule ten-toothed; leaves tapering, downy; 2—3 feet high; rose colour. Common in woods.

3.—**L. vespertina.** (Evening Campion.) Stamens and pistils on different plants; flowers white, fragrant in the evening. Hedges; common.

AGROSTEMMA.

Calyx five-cleft, naked; tough and divided; stamens, united at the ovary stalk, 10; petals undivided; capsule 5 teeth.

1.—**A. Githago.** (Corn Cockle.) Calyx longer than the corolla, not crowned; seeds large; purple. Common in corn-fields with poppy, yellow ox eye, and blue-bottle.

(2.) ALSINEÆ.

Sepals distinct; stamens inserted in a ring beneath the capsule, which has no stalk.

SAGINA.

Sepals 4—5, spreading when in fruit; petals 4—5,

minute; stamens 4—10; styles 4—5; capsule four or five-valved.

1.—**S. procumbens.** (Procumbent Pearlwort.) Stem creeping, smooth; leaves narrow, pointed; petals shorter than the calyx; capsules curved; insignificant. Dry pastures; common.

2.—**S. apetala.** (Annual Pearlwort.) Stem erect, hairy; leaves fringed; capsules erect. On walls or waste ground.

3.—**S. maritima.** (Sea Pearlwort.) Blunt, fleshy leaves, no petals; rare. St. Helen's Spit.

SPERGULA.

Calyx 5; petals 5, undivided; capsule ovate, five-celled, five-valved.

1. **S. subulata.** (Awl-leaved Spurrey.) Calyx hairy; petals and capsule longer than calyx. Cornfield near Shanklin; rare.

2. **S. nodosa.** (Knotted Spurrey.) Leaves opposite, glabrous, the lower one long; petals longer than calyx. St. Helen's Spit.

3.—**S. arvensis.** (Corn Spurrey.) Leaves in a whorl, with stipules; flowers white. Very common among corn.

MŒNCHIA.

Sepals 4, erect; petals 4; stamens 4; styles 4; capsule with 8 teeth.

1. **M. erecta.** (Upright Mœnchia.) A small plant 2—4 inches high; leaves glaucous; flowers white, expands only in the bright sun. St. Helen's Spit, Shanklin Down.

STELLARIA.

Sepals 5; petals 5, deeply two-cleft; stamens 10; styles 3; capsule 6 valves.

1. **S. media.** (Chickweed.) Leaves egg-shaped and pointed; stem hairy, in a zigzag line; petals not longer than sepals; stamens 5—10; flowers small, white. Very common.

2.—**S. Holostea.** (Great Stitchwort.) Erect, angular, and rough; leaves narrow; petals twice as long as sepals. Common.

3.—**S. graminea.** (Lesser Stitchwort.) Flowers in panicles, forked; much smaller in all its parts than the preceding; petals very deeply divided; all species are white. Very common.

4.—**S. uliginosa.** (Bog Stitchwort.) Stem spreading, angular; leaves broadly lanceolate, smooth; flowers panicled; petals shorter than veined sepals. Common in marshes.

HONCKENYA.

Sepals 5; petals 5, two-cleft; stamens 10; styles 3—5; seeds large; flower imperfect.

1.—**H. peploides.** (Sea Purslane.) Leaves sessile, egg or heart-shaped, acute and fleshy; sepals obtuse; leaves in four rows; flowers white. Common in the sand; St. Helen's Spit.

ARENARIA.

Sepals 5; petals 5, entire; stamens 10; styles 3; capsule six-valved; seeds many, minute.

1.—**A. trinervis.** (Three-ribbed Sandwort.) Leaves ovate, three-nerved; flowers solitary from the axil of the stem; undivided petals. Moist situations; abundant.

2.—**A. serpyllifolia.** (Thyme-leaved Sandwort.) Leaves ovate, sessile, rough; stem forked, downy; 2—6 inches high; white flowers. Very common. There are two other varieties; one in salt marshes.

CERASTIUM.

Sepals 5; petals 5, two-cleft; stamens 5—10; styles 5; capsule tubular, 5—10 teeth.

1.—**C. triviale.** (Narrow Mouse-ear Chickweed.) Leaves lanceolate; stem viscid, spreading and hairy. Dry banks and walls; common. There are three other species differing slightly.

MALACHIUM.

Sepals 5; petals 5, two-cleft; stamens 10, 5 with glands; capsule with 5 valves.

1.—**M. aquaticum.** (Water Chickweed.) Lower leaves stalked, all hairy on the margin; much branched, straggling; flowers white in the angles. Godshill Marshes, Brading. Not common.

Order XII.—LINACEÆ. *Flax tribe.*

Sepals 3—5, overlapping in bud; petals 3—5, soon falling; stamens alternate with petals, having small teeth between them; ovary 3—5; styles 3—5; capsule globular; seeds 1, in imperfect cells; leaves undivided.

Among plants of the order Linaceæ we find the Flax of commerce. Many are acquainted with the beautiful green of the flax-fields of Italy at certain seasons of the year, a green almost unrivalled in its intensity; or later on, the delicate blue of the quickly-fading flowers which attract the wearied eyes of travellers by Italian railroads. Few species are indigenous to Britain, and about sixty have been scientifically described from foreign countries. All the calices of the genus have five sepals, the corolla petals are inferior, and the capsule is ten-celled. Although some cultiva-

tion of flax always goes on in England, it has never extended very greatly, owing to the precarious nature of the crop in our uncertain climate. Linseed oil is extracted from flax-seed, obtained by bruising and then pressing the seed. The value of flax can hardly be over-estimated, and it is probable that the state of Ireland may, in the future, be materially improved through the cultivation of flax and manufacture of linen; that industry is the one bright spot in Irish progress. Besides the linen factories, there is an extensive demand for flax in the composition of oil-cake for cattle, a valuable article necessary to all farmers.

LINUM.

Sepals and petals 5; capsule ten-valved, ten-celled.

1.—**L. angustifolium.** (Narrow-leaved Flax.) Leaves very narrow, pointed; sepals three-ribbed; light blue. Along the cliffs between Sandown and Shanklin. Plentiful.

2.—**L. catharticum.** (Cathartic Flax.) Leaves broader at the base, opposite; sepals pointed; small white flowers, drooping. Downs and chalk banks. Common.

RADIOLA.

Sepals 4, connected; three-cleft; petals 4; capsule eight-valved, eight-celled.

1.—**R. millegrana.** (Thyme-leaved Flax.) A tiny plant. Stem forked, leaves opposite; small white flowers. Not common; where the Niton, Godshill, and Chale roads join, in moist places.

Order XIII.—**MALVACEÆ.** *Mallow tribe.*

Sepals 5, mostly united at the base; sometimes an

outer calyx; petals 5, twisted when in bud; stamens numerous, united in a tube; ovary of several carpels united; styles equal to carpels; capsules one-seeded.

The Malvaceæ comprise many beautiful genera of plants, besides our English mallows. The tropical Hibiscus is in this order, as well as the Tree Mallows and Hollyhocks of our old-fashioned gardens. The common mallows have wonderful healing powers. Horses which have been dangerously staked or injured may often be cured by fomentation of mallow; leaves, stalk, flowers—all the plant being boiled up together for poultices. For microscopic study the pollen of a mallow is a most exquisite object, each grain being like a crystal. A common mistake is made with regard to the Marsh Mallow, which is rose-coloured, and not very abundant. It is the large yellow Marsh Marigold which is so frequently confused with the mallow. The Tree Mallow, or Lavatera, common on the Mediterranean, is a very handsome plant, with ample foliage and rose-coloured flowers. About twenty or thirty species have been introduced from that part of Europe.

MALVA.

Styles numerous; outer calyx three-leaved, inner one five-cleft.

1.—**M. sylvestris.** (Common Mallow.) Stem erect; leaves kidney-shaped, seven-lobed; fruit rough, not downy; very common in waste places; purple flowers.

2.—**M. rotundifolia.** (Dwarf Mallow.) Stem creeping; leaves heart-shaped, five-lobed; flowers pale lilac. Frequent by roadside, especially near towns or villages.

LAVATERA.

Styles numerous; outer calyx three-lobed, inner one five-cleft.

1.—**L. arborea.** (Sea Tree Mallow.) A handsome plant, 6—12 feet high, woody. Leaves soft and angular; many purple flowers. Luccombe Beach. Hardly wild.

ALTHÆA.

Styles numerous; outer calyx six or nine-cleft.

1.—**A. officinalis.** (Marsh Mallow.) Leaves three or five-lobed, soft and downy; flowers pink, in clusters. Near Brading Harbour.

The pollen of all the mallows is a beautiful object under a microscope.

Order XIV.—**TILIACEÆ.** *Lime tribe.*

Sepals 4—5; petals 4—5, sometimes wanting; stamens numerous; glands to each petal; ovary single, of 2—10 carpels; style 1; stigma equal to carpels.

TILIA.

Sepals 5, soon falling; ovary five-celled; capsule two-seeded.

T. parvifolia. (Small-leaved Lime.) Leaves heart-shaped, smooth on both sides; capsule brittle; a tree with beautiful bright green leaves; very sweet smelling; in our locality quite wild. Near Wilmington.

Order XV.—**HYPERICACEÆ.** *St. John's Wort tribe.*

Sepals 4—5, not falling off, sometimes dotted; stamens numerous, united at the base; ovary single;

styles 3—5; capsule berry-like, with several cells; seeds minute.

The St. John's Wort is a large and diversified genus of ornamental plants, constituting the type of the natural order Hypericaceæ, containing about 300 known species, trees, shrubs, and herbaceous plants, widely distributed over the world, and in very different climates, but particularly numerous in North America. The leaves are generally covered with pellucid dots, and the edges of the leaves, sepals, and petals, bordered with black glands. Of the genus Hypericum many species are common natives of Great Britain, adorning woods and heaths with their bright yellow flowers. The common St. John's Wort (H. perforatum) was formerly held in great estimation for the fancied property of influencing enchantments; and was, at one time, carried about their persons by the Scotch peasantry as a charm against witchcraft! On St. John's Day the country people of France and Germany still gather it as a preservative against thunder!

The Tutsan, or Park-leaves (H. androsæmum), regarded by some modern botanists as constituting a separate genus (Androsæmum officinale), is also a native of Britain, with berry-like fruit. It was once held in great esteem as a vulnerary, its English name, Tutsan, being derived from the French "*tout sain*" (all whole). The Hypericaceæ are all somewhat allied to the gum and resinous families. All have a large quantity of resinous juice, sometimes exceedingly like gamboge.

HYPERICUM.

Sepals 5; petals 5; stamens numerous; filaments in sets 3—5: capsule three-celled.

1.– **H. Androsæmum.** (Common Tutsan). A shrub. Leaves egg-shaped, sessile; sepals unequal; 2—3 feet high; large clusters of yellow flowers, with resinous smell. The Landslip.

2.—**H. perforatum.** (Perforated St. John's Wort.) Erect; stem two-edged; leaves opposite, perforated with pellucid dots; styles 3; 2 feet high; many yellow flowers. Common.

3.—**H. quadrangulum.** (Square-stalked St. John's Wort.) Stem erect; four-angled; leaves egg-shaped; with pellucid dots; sepals erect; panicles of yellow flowers. Damp places; common.

4.—**H. hirsutum.** (Hairy St. John's Wort.) Erect, round stem, and downy. Leaves downy; sepals fringed. Appuldurcombe Woods.

5.—**H. montanum.** (Mountain St. John's Wort.) Stem erect, round, smooth; leaves oblong, sessile, dots near the edge; sepals fringed. About 2 feet high. Pelham Woods; rare.

6.—**H. pulchrum.** (Small Upright St. John's Wort.) Erect, smooth, round stem; leaves heart-shaped; petals and sepals fringed with glands; buds red; petals yellow. Downs.

7.—**H. Elodes.** (Marsh St. John's Wort.) Stem creeping; branches erect; leaves nearly round, horny; flowers pale yellow, open only short time. Rookley Wilderness.

Order XVI.—**ACERACEÆ.** *Maple tribe.*

Calyx five-cleft; petals same number; stamens about 8; ovary two-lobed; style 1; stigma two-celled; one or two-seeded.

ACER.

1.—**A. campestre.** (Common Maple.) Leaves five-lobed; flowers erect; a small tree. Hedges; common.

Order XVII.—GERANIACEÆ. *Geranium tribe.*

Sepals 5, ribbed, overlapping in bud; stamens 10; ovary of 5 carpels round an awl-shaped beak; styles 5, united; stigmas 5; capsules 5, one-seeded.

The genus Geranium is the type of the order Geraniaceæ. The order is distinguished from all others by the peculiar structure of its capsule. Five cases, with the same number of their styles round a long conical beak, constitute the fruit. At the time of maturity the styles roll back, and the parts are difficult to separate. The name of Cranesbill has been given to the order, from a resemblance in form of the capsule to the bill of a crane. The blue Meadow Cranesbill is one of our handsomest wild flowers; and if a cultivated species of blue Pelargonium is ever obtained, it will be through this wild species. G. sanguineum (Blood-red Cranesbill) ought to find a more prominent place in our gardens. As a brilliant border plant few could rival it. The Geranium tribe have no tendrils, but they produce their peduncles in such a manner as to correspond closely with tendrils of the Viniferæ. Another point of relationship between Vine and Geranium is the jointed stem common to both. The genus Erodium is remarkable for the capsules, which have a curious power of moving or creeping after they are cast off from the plant. All the garden pelargoniums belong to this tribe of geraniums.

GERANIUM.

Stamens 10, alternately long and short; fruit beaked; capsules 5, with long awn, not bearded.

1.—**G. Robertianum.** (Herb Robert.) Stem spreading; leaves deeply cut; sepals angular; capsules hairy; stem red; flowers pink. Very common.

2.—**G. lucidum.** (Shining Cranesbill.) Leaves glossy, nearly round; five-lobed; sepals angular; capsules two-keeled, wrinkled. A small species, with rose-coloured flowers. Stone walls, St. Lawrence; Pelham Woods. Not common.

3.—**G. rotundifolium.** (Round-leaved Cranesbill.) Plant downy; leaves round, cut, and lobed; petals entire; capsules hairy; not very common; pink. Near St. Lawrence.

4.—**G. molle.** (Dove's-foot Cranesbill.) Downy; leaves round, cut, and lobed; capsule not hairy. Very common; petals notched, a distinguishing mark.

5.—**G. pusillum.** (Small-flowered Cranesbill.) Downy; resembles molle, only much smaller. Waste places; common.

6.—**G. dissectum.** (Jagged Cranesbill.) Stem spreading, hairy; leaves divided into narrow segments; pink. Very common.

7.—**G. columbinum.** (Long-stalked Cranesbill.) Stem spreading, hairy; leaves five-lobed; flower-stalks very long; flowers larger, purple, tinged almost imperceptibly with blue. Bembridge; Brading. Rare.

With Geraniums, mark the root-leaves well.

ERODIUM.

Stamens 10, 5 imperfect; 5 glands at the base; fruit beaked and bearded.

1.—**E. cicutarium.** (Hemlock-leaved Storksbill.) Stem prostrate, hairy; stalks many-flowered; leaves pinnate; pink or lilac flowers, which soon fall. Near Cripple Path.

2.—**E. maritimum.** (Sea Storksbill.) Stem prostrate, hairy; few-flowered; leaves oblong, heart-shaped; smaller than preceding species. St. Helen's Spit.

ORDER XVIII.—**OXALIDACEÆ.** *Wood Sorrel tribe.*

Sepals 5; petals 5, twisted in the bud; stamens 10, 5 short: ovary three or five-celled; styles 3—5; capsule 3—5.

The little Oxalis is the only British representative of a large thalamiflorous order, the Oxalidaceæ. The sensitive tri-lobed leaf is a general inhabitant of woodlands. In early spring, as the anemone begins to fade, the delicate sorrel puts forth its fresh leaves under the shelter of old stumps, or half hidden in a carpet of moss. By some writers the Oxalis is said to be the Shamrock of St. Patrick. It is evident either wood-sorrel or clover would equally serve as the required emblem. At the Cape of Good Hope many species of Oxalis are known, and have been introduced into this country. A four-leaved wood-sorrel (Oxalis tetraphylla) is a native of Mexico, having inversely hearted-shaped, radical leaves, and purplish flowers, either single or four together.

OXALIS.

Sepals united below.

1.—**O. Acetosella.** Leaves directly from the root, three-lobed, as the Shamrock; flowers white and beau-

tifully pencilled. Abundant in woods in the early spring.

ORDER XIX.—**CELASTRACEÆ.** *Spindle Tree tribe.*

Sepals 4—5, overlapping in bud, inserted on a fleshy disc; petals 4—5, alternate with them; ovary two or five-celled; capsule 2—5 cells, berry-like.

The Spindle Tree order and the Rhamnaceæ, or Buckthorn tribe, are very nearly allied, differing only in minute botanical characters of the stamens, sepals, and ovarium. The fruit of the Buckthorn is not unwholesome, while the bark of the plant is a violent emetic. The berries are very succulent, and have a deep green juice. The well-known pigment called sap-green is prepared from this juice, combined with an alkali. One species, a native of China, is much used as a substitute for tea by the poorer natives, and is commonly known as the tea-plant; it is an evergreen shrub, with greenish flowers.

The Common Spindle, with its three-lobed, coral-like berries, is well known in our hedgerows.

EUONYMUS.

Capsule 3—5 angles, with 3—5 cells; each one-seeded, with fleshy coating.

1.—**E. europæus.** (Common Spindle Tree.) Petals 4, acute; stamens 4; branches angular; leaves broadly lanceolate, finely serrated; flowers greenish; berry coral-like. St. Lawrence.

ORDER XX.—**RHAMNACEÆ.** *Buckthorn tribe.*

Calyx four or five-cleft; petals 4—5; stamens 4—5,

opposite each petal; ovary superior, two or four-celled, with fleshy disc; seeds several in number.

RHAMNUS.

Calyx vase-shaped; petals sometimes wanting; shrub.

1.—**R. Frangula.** (Alder Buckthorn.) Thorns wanting; flower perfect, five-cleft; leaves smooth and entire; berry two-seeded; 6—10 feet high; dark leaves; greenish flowers. America Woods.

ORDER XXI.—LEGUMINOSÆ. *Pea and Bean tribe.*

Calyx five-cleft, the odd lobe in front; petals 5, butterfly-like; stamens 10, either united or in sets of 9 and 1; ovary, style, and stigma single; seed-vessel a pod, two-valved.

Leguminous plants may be numbered by thousands, and comprise all having legumes or pods similar to the pea and bean. Clovers, vetches, acacias, laburnums, wisteria, mimosa, coral-tree, cassia, and hundreds of well-known genera are included in the order. Liquorice is extracted from a plant of this tribe, Glycyrrhiza glabra (or Liquortia officinalis), which is a native of Syria, Spain, and Languedoc, where it is a troublesome weed to cultivators. The root runs deeply into light sandy soils, and has a pale yellow saccharine juice. It grows three to five feet high, has a striated stem and few branches; the leaves are alternate and pinnate; the flowers have a blue or purplish colour. The plant is cultivated in England for economical purposes, chiefly for the druggist and brewer. The roots require three years to mature sufficiently for profit, so that it is common to grow a crop of onions or such like be-

tween the rows. A fair crop yields from eighteen to twenty cwt., returning an average price of 45*s.* per cwt.; on the other hand the cost amounts to 10*l.* per acre for its cultivation. The root contains sugar, starch, and resinous oil, and other elements in certain proportion. The well-known extract of liquorice is obtained by pouring boiling water over sliced sections of the root—a gallon of water to a pound of root; the whole is boiled down to one half of the original volume, which is strained and evaporated to the required consistency. In Italy the roots are sometimes pressed out in an olive mill.

ULEX.

Calyx of 2 sepals, with small bracts; pod short, swollen; few-seeded.

1.—**U. europæus.** (Common Gorse.) Common everywhere.

2.—**U. nanus.** (Dwarf Gorse.) Calyx spreading; bracts adhering to calyx; quite a small plant. St. Helen's Spit.

GENISTA.

Calyx two-lipped, the upper two-cleft, the lower with 3 teeth; style awl-shaped; pod swollen or flat; a shrub.

1.—**G. anglica.** (Needle Green Weed.) Stem thorny at the base; leaves simple, narrow, smooth; pod inflated; a small shrub; flowers in clusters, yellow. Godshill.

2.—**G. tinctoria.** (Dyer's Green Weed). No thorns; leaves narrow, acute; flowers in yellow clusters; pod flat, smooth; about 1 foot high, stem tough. Brading Marshes; Rookley.

SAROTHAMNUS.

Calyx two-lipped, with 2 and 3 teeth respectively; standard ovate; style thickened; pod flat, many-seeded; leaves simple; pod not jointed.

1.—**S. Scoparius.** (Common Broom.) A very abundant plant on sandy banks; mostly yellow; occasionally white.

ONONIS.

Calyx five-cleft, segments narrow; beaked keel; style thread-like; pod swollen, few-seeded; leaflets single, or of three; pod unjointed.

1.—**O. arvensis.** (Rest Harrow.) Plant hairy; leaflets toothed; flowers rose colour, axillary; calyx short; thorny; very common; one variety creeps, another stands upright.

MEDICAGO.

Leaf in leaflets of 3; stamens 9 and 1; pod sickle-shaped.

1.—**M. lupulina.** (Black Medick.) Leaflets toothed, inversely egg-shaped; stipules almost entire; flowers in dense heads; pod rough, one-seeded; yellow. Dry pastures.

2.—**M. maculata.** (Spotted Medick.) Leaflets inversely egg-shaped; stipule toothed; flowers small, yellow, 2—4 together; pods twisted in a prickly ball; each leaf with a black spot. St. Helen's Spit; Pelham Woods, St. Lawrence.

3.—**M. denticulata.** (Toothed Medick.) Stipules jagged; pods loosely spiral; prickles hooked; yellow; rare Sandown Bay.

TRIFOLIUM ARVENSE *(P.37)*

L. Reeve & Cº London.

MELILOTUS.

Calyx 5, nearly equal teeth; petals separate, soon falling; pod with few seeds, longer than calyx; leaflets of 3; stamens 9 and 1.

1.—**M. officinalis.** (Yellow Melilot.) Erect; leaflets narrow, serrated; flowers all one side the stem; pod two-seeded; 2—3 feet high; light green foliage; abundant. The Landslip.

2.—**M. leucantha.** (White Melilot.) The standard longer than the keel; flowers white; rare. Ventnor.

TRIGONELLA.

Calyx 5, nearly equal teeth; petals distinct; pod nearly straight, many-seeded; stamens 9 and 1; leaflet of 3.

1.—**T. ornithopodioides.** (Bird's-foot Fenugreek.) Flowers few; pod with 8 seeds, double the length of the calyx; prostrate; with reddish flowers. Not common. St. Helen's Spit.

TRIFOLIUM.

Calyx of 5, unequal teeth; petals combined; pod few-seeded, concealed in calyx; leaflet of 3; stamens 9 and 1.

1.—**T. repens.** (Dutch Clover.) The common white clover in every field and by the roadside. Pod with several seeds.

2.—**T. pratense.** (Purple Clover.) Calyx hairy; stipules broad. The common purple clover. Everywhere.

3.—**T. arvense.** (Hare's-foot Trefoil.) Flowers in terminal heads, soft and downy; calyx teeth hairy,

longer than corolla; erect and branched; pale-pink flowers, nearly concealed; not common. St. Helen's Spit.

4.—**T. scabrum.** (Rigid Trefoil.) Flowers in prickly heads, terminal and axillary; calyx teeth unequal, rigid, spreading; very inconspicuous; white. St. Helen's Spit.

5.—**T. striatum.** (Soft Knotted Trefoil.) Flowers in downy heads, terminal and axillary; calyx rigid, furrowed, awl-shaped teeth; swollen when in fruit; stem ascending; plant covered with silky hairs; flowers light purple. St. Helen's Spit.

6.—**T. glomeratum.** (Smooth round-headed Trefoil.) Flowers in prickly heads, terminal and axillary; calyx teeth broad, reflexed; prostrate; heads round; leaves white-spotted; flowers bright pink. St. Helen's Spit.

7.—**T. subterraneum.** (Subterraneous Trefoil.) Flowers 3—5, axillary; branched fibres, penetrating into the ground; very small plant; white; bracts large. Steephill; Luccombe.

8.—**T. suffocatum.** Stem spreading; head round, sessile; petals shorter than the calyx; in loose sand. St. Helen's Spit.

9.—**T. procumbens.** (Hop Trefoil.) Flowers in round yellow heads; leaves stalked. St. Helen's Spit.

10.—**T. filiforme.** (Lesser Yellow Trefoil.) Flowers 3—12 in loose heads; leaves almost sessile; abundant in dry pastures. Other species may be found on St. St. Helen's Spit.

LOTUS.

Calyx 5, teeth nearly equal; keel beaked; pod round, many-seeded; stamens 9 and 1; leaflets of 3.

1.—**L. major.** (Great Bird's-foot Trefoil.) Flowers in umbels 8—10; calyx spreading; erect; hairy, yellow. Landslip.

2.—**L. corniculatus.** (Common Bird's-foot Trefoil.) Calyx not spreading; stem prostrate. Boniface Downs, plentiful.

L. angustissimus may probably be discovered on the sea cliffs. Flowers 3—4; plant hairy; calyx teeth very long.

ANTHYLLIS.

Leaves pinnate; stamens united; calyx 5, inflated; pod enclosed in calyx.

A. vulneraria. (Kidney Vetch.) Very common on the cliffs. A hardy plant, with hoary leaves and yellow flowers.

ASTRAGALUS.

Stamens 9 and 1; keel of corolla blunt; pod two-celled; leaves pinnate, with terminal leaflet.

1.—**A. glycyphyllos.** (Sweet Milk Vetch.) Prostrate; leaves longer than flower-stalk; pods curved, smooth; stem 2—3 feet long; spikes of dull creamy-yellow flowers. Below Buddle, Niton.

VICIA.

Calyx 5; style thread-like, with wing of down; leaves pinnate, with tendrils at the end; pod not jointed; stamens 9 and 1.

1.—**V. sylvatica.** (Wood Vetch.) Leaflets about 8 pairs; stipules crescent-shaped, toothed; 3—6 feet high, climbing, flowers cream-colour, blue veins. Not common. Luccombe Copse.

2.—**V. Cracca.** The Common Vetch, with clusters

of bright purple flowers, climbing over hedges by the roadside. A very handsome species.

3.—**V. sativa.** (Common Vetch.) Flowers in pairs; stalks short; leaflets 5—7 pairs; stipules half arrow-shaped, toothed, having a dark spot; purple or red flowers. Common.

4.—**V. lathyroides.** (Spring Vetch.) Flowers solitary, sessile; pods smooth; leaflets 2—3 pairs; stipules entire, not marked with a spot; smaller than the last; 6 inches long; bright purple. Sandown Bay.

5.—**V. sepium.** (Bush Vetch.) Flowers in axillary clusters 4—6; pods smooth; creeping over bushes; bluish purple. Common.

6.—**V. hirsuta.** (Tare.) Flowers in clusters; pods hairy, two-seeded; slender plant, with very small bluish-white flowers. Common.

7.—**V. tetrasperma.** (Smooth Tare.) Flowers 2, together, on slender stalk; pods smooth, four-seeded; light purple. Common.

8.—**V. gracilis.** (Slender Vetch.) Flowers 1—4; pods six or eight-seeded; perhaps a variety. Near Culver Cliff.

9.—**V. Bobartii.** A variety of sativa. Occurs in the Isle of Wight.

LATHYRUS.

Calyx five-cleft; style flattened, downy beneath the stigma; leaves with tendrils; stamens 9 and 1; leaves pinnate.

1.—**L. pratensis.** (Meadow Vetchling.) Leaf 2 narrow leaflets; stipules large, arrow-shaped; bright yellow. Common.

LATHYRUS LATIFOLIUS *(P41.)*

L. Reeve & Co. London.

2.—**L. latifolius.** (Broad-leaved Everlasting Pea.) Leaflets broad; climbing 5—6 feet; flowers in clusters, rose colour. Landslip.

3.—**L. Nissolia.** (Crimson Vetching.) Leaves narrow, grass-like; flowers single, crimson; no tendrils. Chale; Brading.

ORNITHOPUS.

Pod curved and jointed, each cell with 1 seed; keel small; leaves pinnate, with odd leaflet.

1.—**O. perpusillus.** (Common Bird's-foot.) A very small creeping plant; leaflets 6—12, with one odd; flower minute, cream colour, veined with crimson. St. Helen's Spit.

HIPPOCREPIS.

Pod crescent-shaped, jointed, each pod many-notched; keel narrow and beak-like; leaves pinnate, with odd leaflet.

H. comosa. (Horse-shoe Vetch.) Very common on the Downs. Flowers in yellow umbel.

ONOBRYCHIS.

Pod straight, one-celled, one-seeded; leaves pinnate; 10—12; with odd leaflet.

O. sativa. (Saintfoin.) Flowers in a handsome crimson spike, striped. Common. Rifle Valley, Ventnor.

ORDER XXII.—**ROSACEÆ.** *Rose tribe.*

Calyx generally five-lobed, sometimes 4, 8, or 10; petals 5, regular; stamens usually more than 12, attached to the calyx; carpels many, or single; styles distinct; fruit a drupe; erect capsules; nut-like seeds

in fleshy receptacle, enclosed in the fleshy tube of the calyx, or a pome (apple).

The tribes which constitute the order Rosaceæ are of infinite variety, and perplexing to the botanist; few indeed of our eminent authorities agree among themselves as to the specific distinctions of roses or brambles. The difficulties must be great where we find included, besides the rose, the strawberry, potentilla, bramble, avens, burnet, ladies' mantle, hawthorn, medlar, quince, cotoneaster, loquat, pear, apple, service, almond, peach, apricot, plum, and cherry.

The Wild Rose, with its innumerable varieties, has been noticed as characteristic of the English roadsides from time immemorial. That great general, Julius Cæsar, with all his fighting and marching, found time to note the prevalence of roses in the country he was conquering. They are climbing or trailing plants. R. spinosissima (Burnet Rose) is characterized by numerous equal bractless prickles, persistent sepals, and scarcely any disc; another (the Cinnamon Rose) is bracteate and unarmed, has glandless leaflets, and a slender disc; a third has unequal bracteate prickles, rugose leaflets, and a thick disc; a fourth (Sweet Briar) has arched branches, unequal prickles, glandular leaflets, persistent sepals, and thick disc; while the common Dog Rose has arched branches, equal hooked prickles, glandless leaves, deciduous sepals, and a disc; a sixth (Villars Rose) has erect branches, straight prickles, persistent sepals, and a thick disc; and a dozen other species might be named differing from these seven and from each other. In Hardwicke's *Science Gossip* for June, 1880, a clear and concise study of British wild roses was published, to

which readers are referred for further information. We are all familiar with the bright autumn Hip, a fleshy extension of the calyx, which contains the angular seeds in a packing of loose, silky bristles. Six species of the sub-genus Dog Rose are found in our hedgerows: Sherard's, Forster's, the naked, the twiggy, the spriggy, and the bractescent—all of which have pink flowers. The twiggy and spriggy are trailers, the other four are upright.

Four species of the sub-genus Scotch Rose may be met with on sandy heaths, sea shores, or moorlands.

The Apple, or Villars Rose, is distinguished easily in winter time by its red, smooth bark. It has few prickles, but those few strong and sharp. The leaves are large and hairy, downy beneath. The fruit is apple-like, covered with soft prickles, and preserved makes a palatable sweetmeat.

With regard to pears, plums, and other wild fruits, it is very remarkable that they possess thorns, which invariably disappear through the process of cultivation. This might be applied to mankind. Education (i.e., cultivation) tends to remove the thorns and roughnesses of nature; hence the race is improved.

The genus Rubus (Bramble), &c., form the sub-order Potentillidæ. Fifteen species, besides numberless varieties, have been ascertained to grow wild in England, Scotland and Wales. The greater number have palmate leaves, six have simply lobed leaves, and ten pinnate. A double-flowered variety is occasionally met with—a beautiful though, perhaps, accidental form. The thornless variety (R. inermis) has bluish leaves, but is remarkable because thornless and perfectly smooth. This peculiarity has excited great attention among

botanists. Several garden species, with extremely handsome foliage, have been introduced into England. The cloudberry, dewberry, and raspberry, are included in the genus Rubus.

(1.) AMYGDALEÆ. *Almond group.*

Pistil solitary; fruit a drupe or seed, enclosed in a hard case, and surrounded by fleshy pulp and rind.

PRUNUS.

Nut of the drupe smooth.

1.—**P. domestica.** (Wild Plum.) Fruit covered with bloom; young leaves rolled together; no thorns. Bank End, St. Lawrence.

2.—**P. communis.** Fruit with bloom; leaves rolled together; flowers solitary or in pairs; branches very thorny. The sloe or blackthorn. Common.

3.—**P. Padus.** (Bird Cherry.) Fruit without bloom; young leaves folded; flowers in clusters; leaves narrow. Cook's Castle.

4.—**P. Avium.** (Wild Cherry.) Fruit without bloom; leaves folded; flowers in umbels; leaves drooping, downy beneath; calyx contracted; fruit heart-shaped. America Wood, Shanklin.

(2.) SPIREIDÆ. *Meadow Sweet group.*

Seeds in capsules, opening at the side.

SPIRÆA.

Calyx five-cleft; stamens numerous; capsules 3—12.

1.—**S. Ulmaria.** (Meadow Sweet.) Leaves pinnate, downy beneath; terminal leaf large; flowers in compound cymes 2—4 feet high; yellowish-white. Common in damp ground.

2.—**S. Filipendula.** (Dropwort.) Leaves pinnate, cut into narrow serrated segments; flowers in a panicled cyme; petals pink externally; scentless. Downs above Steephill.

(3.) POTENTILLIDÆ. *Strawberry group.*

Calyx permanent with nut-like seed, on a pulpy, or dry receptacle.

GEUM.

Calyx ten-cleft in two rows; petals 5; styles hooked at the extremity.

1.—**G. urbanum.** (Common Avens.) Erect, with rigid awns; root leaves pinnate, upper ones ternate, yellow. Common in hedgerows.

POTENTILLA.

Calyx ten-cleft in two rows; petals 5; seeds without awns on a dry receptacle.

1.—**P. anserina.** (Silver Weed.) Leaves pinnate, silvery and downy; flower stalks solitary, plant creeping; yellow flower. Common by the roadside.

2.—**P. reptans.** (Creeping Cinquefoil.) Leaves divided into 5; plant creeping, rooting, flowers solitary, on long stalks, bright yellow. Very common on banks.

3.—**P. Fragariastrum.** (Strawberry-leaved Cinquefoil.) Prostrate leaflets, cut, silky; petals equal in length to the calyx. Common in Rew copses; flowers white; frequently mistaken for the strawberry; petals are notched.

TORMENTILLA.

Calyx eight-cleft in two rows; petals 4; seeds without awns, on a dry receptacle.

1.—**T. officinalis.** (Common Tormentil.) With 3 leaflets, ternate and sessile, narrow and acute; erect; small yellow flowers. Very common on Ventnor Downs.

COMARUM.

Calyx ten-cleft in two rows; petals 5; seeds without awns on a fleshy receptacle.

1.—**C. palustre.** (Marsh Cinquefoil.) Leaves divided into 5 or 7; flowers dingy purple. Not uncommon at Rookley and Godshill.

FRAGARIA.

Calyx ten-cleft in two rows; petals; seeds without awns, on a fleshy receptacle.

1.—**F. vesca.** (Wild Strawberry.) Calyx reflected; plant hairy; petals entire; rooting scions. Landslip; very common.

RUBUS.

Calyx five-cleft; petals 5; fruit many small drupes.

1.—**R. Idæus.** (Raspberry.) Erect; downy and prickly; leaves pinnate, of 5 leaflets, downy beneath; flowers white and drooping; fruit scarlet. Appuldurcombe.

2.—**R. fruticosus.** (Blackberry.) Stem angular, prickly, and rooting; leaves of 5 leaflets; flowers in panicles; very common. There are many varieties of Rubus, authorities disagreeing as to which are really separate species.

3.—**R. cæsius.** (Dewberry.) The fruit of the dewberry may easily be recognized by the beautiful bloom like a hot-house grape. It generally grows at the bottom of hedgerows.

AGRIMONIA.

Calyx five-cleft, covered with the bristles; petals 5; stamens about 15; seeds 2, in tube of the calyx.

A. Eupatoria. (Agrimony.) A spike from 1—2 feet high; leaves pinnate; flowers yellow. Aromatic. Common.

(4.) SANGUISORBIDÆ. *Burnet group.*

Petals absent; hard calyx with nut-like seeds; calyx three or eight-cleft; stamens few.

ALCHEMILLA.

Calyx eight-cleft, two rows; stamens 1—4; seeds 1—2.

1.—**A. vulgaris.** (Ladies' Mantle.) Leaves kidney-shaped, seven or nine-lobed, serrated; flowers in loose divided clusters, yellowish-green, and quite small. Ventnor and Shanklin Downs.

POTERIUM.

Stamens and pistils in separate flowers; calyx four-cleft, red; 3 bracts at the base of the calyx; stamens numerous.

1.—**P. Sanguisorba.** (Salad Burnet.) Leaves pinnate, serrated; pistils crimson; has a cucumber taste and smell. Common on the grassy slopes of the Downs.

(5.) ROSIDÆ. *Rose group.*

Nut-like hairy seeds enclosed in fleshy calyx tube; leaves pinnate; a shrub with prickles.

ROSA.

Calyx elongated, contracted at the mouth, five-cleft; petals 5; stamens numerous; seeds numerous.

1.—**R. spinosissima.** (Burnet Rose.) A low plant with small serrated leaves; calyx simple, fruit nearly round; flowers nearly white, fragrant; fruit nearly black. Ventnor Downs.

2.—**R. tomentosa.** (Downy-leaved Rose.) Leaves doubly serrated, downy calyx pinnate; long, stout shoots; deep red flowers. Bohemia, near Godshill. Not common.

3.—**R. canina.** (Dog Rose.) Common on every hedge.

4.—**R. arvensis.** (Trailing Dog Rose.) Flowers quite white, stem brown, few prickles; calyx pinnate, not remaining attached to the fruit. Brading Woods.

There are several other species, R. cinnamomea, &c.

(6.) POMEÆ. *Apple group.*

Fruit a pome, a calyx which enlarges into a fleshy or mealy fruit.

PYRUS.

Calyx five-cleft; petals 5; styles 2—5; fruit fleshy, with 5 two-seeded cells.

1.—**P. communis.** (Wild Pear.) Leaves simple, egg-shaped, serrated; flowers in corymbs; thorny. America Woods.

2.—**P. Malus.** (Crab Apple.) Very common, and well-known by its beautiful pink and white blossom and acid fruit.

4.—**P. torminalis.** (Wild Service-tree.) Leaves egg-shaped, with deep lobes; flowers in loose corymb; with brown berries. America Woods.

4.—**P. Aria.** (White Beam-tree.) Leaves egg-

shaped, irregularly serrated, white underneath; flowers white in close corymb. Luccombe and Wroxall.

CRATÆGUS.

1.—**C. Oxyacantha.** The well-known Hawthorn or May, usually white, occasionally pink; splendid old trees near Niton.

Order XXIII.—ONAGRACEÆ. *Willow Herb tribe.*

Calyx usually four-lobed; tube united to the ovary; stamens 4 or 8, rarely 2; ovary two or four-celled; stigma knobbed, four-lobed; fruit a berry, a four-celled capsule.

The willow herbs are essentially July plants, seldom putting forth their rose-coloured flowers before that month. The rose-bay is too frequently the outcast of a garden, and rare as a truly wild species. The Œnothera, or evening primrose, is, in the Isle of Wight, as nearly indigenous as anywhere in England. At St. Helen's Spit, on sand-hills facing the sea, numbers of this plant spring up annually, far away from any garden or cultivated spot. Hooker and other authorities state that the evening primrose was introduced from North America, and grows abundantly on sandy cliffs near Liverpool. It appears an undecided question how long a plant must grow in a wild state before it can be claimed in the Flora of a country.

EPILOBIUM.

1.—**E. hirsutum.** (Great Hairy Willow Herb.) Petals equal; stamens erect; stigma four-cleft; plant hairy; leaves narrow, oblong, serrated, branched, root

creeping; 4—6 feet high, rose colour. Wet places; Steephill, by the waterfall.

2.—**E. parviflorum.** (Small Hairy Willow Herb.) Like the last, only small; leaves sessile; plant not branched. Common.

3.—**E. montanum.** (Broad smooth-leaved Willow Herb.) Leaves egg-shaped, smooth; shortly stalked; stem round, slightly hairy; rose colour, usually closed, or nearly so; seed cottony. Dry banks; common. Stigma four-cleft.

4.—**E. tetragonum.** (Square-stalked Willow Herb.) Petals equal; stamens erect; stigma knobbed; leaves narrow, sessile; stem four-angled, smooth. Damp places; Godshill.

5.—**E. palustre.** (Narrow-leaved Marsh Willow Herb.) Leaves slightly toothed, sessile; stem round, smooth; flowers droop when in bud. Marshes; Landslip; Godshill.

ŒNOTHERA.

Calyx four-lobed; stamens 8; capsule four-celled, four-valved; seeds numerous and not bearded.

1.—**Œ. biennis.** (Evening Primrose.) Long, narrow, and smooth leaves; pale yellow flowers, tinged with red when in bud; expands at night; fragrant; rare. St. Helen's Spit.

CIRCÆA.

Calyx two-lobed; petals 2; stamens 2; capsule two-celled; each one-seeded.

1.—**C. lutetiana.** (Common Enchanter's Nightshade.) Stem branched and downy; leaves egg-shaped, toothed, and acute; 1—2 feet high; white

flowers, with pink stamens. Found in damp shady situations near Luccombe.

ORDER XXIV.—**HALORAGACEÆ.** *Mare's Tail tribe.*

Calyx attached to the ovary; 3—4 minute lobes, petals minute or wanting; stamens 1—2 when petals are wanting, equal or double when petals are present; stigma same number as cells; closed capsule; 1 seed.

HIPPURIS.

Calyx minute, two-lobed; petals wanting; stamen 1; style 1.

1.—**H. vulgaris.** (Common Mare's Tail.) Stem erect and jointed; leaves in whorls; flowers sessile, stamens often wanting. The Equisetum has its seeds in a terminal spike, Hippuris at the axils of the leaves. St. Helen's Spit; Godshill Marshes. Not common.

MYRIOPHYLLUM.

Stamens and pistils on separate flowers; calyx 4; petals 4; stamens 8; styles 4; seeds 4.

1.—**M. spicatum.** A water plant. Stem branched and irregular; flowers in whorls; leaves very fine; flowers above surface, greenish. Brading; Sandown.

2.—**M. alterniflorum.** With barren flowers alternate, and fertile flowers in three at axil of leaves; rare. Sandown Fort.

ORDER XXV.—**LYTHRACEÆ.** *Loosestrife tribe.*

Calyx tubular, cleft and toothed; petals inserted between divisions of calyx; stamens numerous; ovary 2—4; style 1; capsule many-seeded.

LYTHRUM.

Calyx with twelve divisions; petals 6; stamens 6—12.

1.—**L. Salicaria.** (Purple Loosestrife.) Leaves opposite, long and narrow; stamens 12; flowers whorled in spikes 2—4 feet high, by water; a rich purple. Rookley Wilderness.

PEPLIS.

Calyx bell-shaped, 12 divisions; petals 6; very small; stamens 6; style blunt.

1.—**P. Portula.** (Water Purslane.) A water plant with smooth opposite leaves; flowers axillary and minute. Lake Common; Godshill Marshes.

Order XXVI.—CUCURBITACEÆ. *Gourd tribe.*

Stamens and pistils on separate flowers, or even plants; calyx five-cleft, united with the corolla; stamens 5, united; anthers twisted; ovary 3; style blunt; fruit succulent.

The gourd family is represented in England by the single genus Bryonia—melons, pumpkins, cucumbers, calashes, gourds, and vegetable marrows are all included in the order. The fruit of the greater number is watery, pulpy, sweet, and refreshing, and in hot countries form no inconsiderable part of the diet. In Spain, for instance, the poorer people would do badly without their melon.

BRYONIA.

Stamens 5, in three sets; style three-cleft; fruit a berry.

1.—**B. dioica.** (White Bryony.) A creeping plant

with tendrils and large leaves; flowers whitish, with veins, some fertile, others barren; berries scarlet.

ORDER XXVII.—**PARONYCHIACEÆ.** *Knot Grass tribe.*

Sepals 5; petals 5, minute between calyx, lobes sometimes wanting, stamens varying in number; ovary not combined with calyx; pistils 2—5; seed one-celled; flowers minute.

SPERGULARIA.

Sepals flat; petals entire, equal to the calyx; styles 3.

1.—**S. rubra.** (Field Sandwort Spurrey.) Leaves narrow, fleshy, and pointed; stipules; plant prostrate; seeds rough; purple flowers. Common in waste places near the sea.

SPERGULA.

Leaves round, petals ovate, entire; styles 5, alternate with sepals.

1.—**S. arvensis.** (Corn Spurrey.) Flowers in panicles, stem branching at all angles, white; leaves in whorls, with stipules. Shanklin, in corn-fields.

ORDER XXVIII.—**CRASSULACEÆ.** *Stonecrop tribe.*

Sepals 3—20, united; petals equal to sepals in number; stamens the same, or twice the number; ovaries one-celled, often with a gland at the base; seeds several.

COTYLEDON.

Sepals 5; corolla tubular, cleft; carpels 5, with a bract.

1.—**C. umbilicus.** (Wall Pennywort.) Plant succulent; leaves quite round and notched, supported

on long stalks; flowers in spikes, whitish-yellow. Kennerley Heath.

SEDUM.

Sepals and petals 4—6; stamens double the petals; carpels 4—5.

1.—**S. album.** (White Stonecrop.) Leaves oblong, blunt and spreading; flowers in a cyme, white, not spotted. Common in St. Helen's Spit; Blackgang.

2.—**S. dasyphyllum.** (Thick-leaved stonecrop.) Smaller than the last; leaves fleshy and globular; rare. Brading.

3.—**S. acre.** (Biting Stonecrop.) Yellow and star-like. Very common in St. Helen's Spit.

ORDER XXIX.—**GROSSULARIACEÆ.** *Gooseberry tribe.*

Calyx from summit of the ovary, four or five-cleft; petals 4—5 small, alternate with the stems; ovary one-celled; style two or four-cleft; berry pulpy.

RIBES.

Calyx and petals 5; stamens 5; berry crowned.

1.—**R. Grossularia.** (Gooseberry.) The common gooseberry of the garden. Wild in Wroxall Woods.

ORDER XXX.—**SAXIFRAGACEÆ.** *Saxifrage tribe.*

Sepals 5; rarely 4; united; petals equal number to sepals; stamens 5—10; ovary of 2 carpels; styles 2; capsule 2.

Saxifrage—a genus of plants of the natural order Saxifrageæ, supposed to contain upwards of 900 species, the majority being low-growing herbs, in-

habiting mountains, rocky grounds, dry walls, or the sides of springs; they form the most attractive and beautiful of all the groups of Alpine flora. If they do not possess grandeur or brilliancy of appearance, they are eminently distinguished for neatness and perpetuity of low-growing foliage; and for simple beauty of the blossoms, which are either white, yellow, flesh-coloured, or purple, and are often spotted. Thirty-two species grow wild in Great Britain and Ireland. Of these, the Saxifraga umbrosa (London-pride, or none-so-pretty) is the best known. It grows wild on the mountains of Britain and Ireland, and has a place in the flower-pots of the humblest cottage.

CHRYSOSPLENIUM.

Calyx 4; petals absent; stamens 8 or 10; capsule two-beaked.

1.—**C. oppositifolium.** (Golden Saxifrage.) Leaves opposite, round; flower in yellow terminal heads; uncommon. Shanklin Chine.

It is curious we should find so few plants of this order in the Island; it is in mountainous countries they abound.

Order XXXI.—UMBELLIFERÆ. *Umbelliferous tribe.*

Calyx superior, five-divided; petals 5; bent inwards; stamens alternate with petals; ovary inferior; two-celled, crowned; styles 2; stigmas small; 2 carpels, ridged; 1 seed in each carpel; flowers in an umbel.

Most people will agree with Loudon that the umbelliferous plants are the least attractive in our flora; they are, however, one of the most important orders in

the world, not more useful as food than they are dangerous as poison. The inflorescence is always umbellate, the stems being usually hollow and the leaves cut. Under the influence of cultivation the injurious properties disappear, and they become wholesome articles of food. As a general rule, those plants of umbelliferous order which inhabit watery places are poisonous, while those growing in dry places are wholesome; but this is not invariable. Celery is a remarkable instance of this rule. Growing by streams and in damp localities it is a poison, while in a garden it becomes fit for food. Œnanthe pimpinelloides is another case in point. The simplicity of form or structure, and uniformity of appearance, have rendered their classification most difficult, and no order is so puzzling to the botanist. That horrible drug, the Asafœtida, belongs to the order, perhaps the most nauseous drug in medicine; yet in Central Asia the inhabitants gather the young shoots to eat as a vegetable, esteeming it a delicacy.

HYDROCOTYLE.

Umbel simple; fruit in two lobes; leaves round, supported on a long stem.

1.—**H. vulgaris.** (Marsh Penny Wort.) Plant creeping; flowers insignificant, lower than the leaves. Common. Godshill Marshes.

SANICULA.

Flowers in panicles, the outer ones with no stamens, the inner ones without pistils; seed egg-shaped, covered with prickles.

1.—**S. europæa.** (Wood Sanicle.) Common in

damp woods; 1 foot high; leaves shiny; three or five-lobed, and cut; flowers dull white.

ERYNGIUM.

Flowers in prickly head; fruit egg-shaped, with scales.

1.—**E. maritinum.** (Sea Holly.) Whitish-green leaves; prickly flowers bluish, in sand. St. Helen's Spit.

CONIUM.

Umbel compound; fruit two-lobed, 5 ridges; few bracts.

1.—**C. maculatum.** (Hemlock.) Plant standing several feet, much branched; deeply-cut foliage, and white flowers.

SMYRNIUM

Umbel compound; fruit two-lobed, with 3 ridges.

1.—**S. Olusatrum.** (Common Alexanders.) A stout plant, growing near the sea; leaves in three, bright and glossy; flowers yellowish; stem furrowed; seeds turn very dark. Banks facing Steephill.

APIUM.

Umbel compound; fruit two-lobed, 2 distinct carpels with 5 ridges; no bracts.

1.—**A. graveolens.** (Celery.) Not to be mistaken, on account both of smell and taste; leaves like garden celery, of which it is the origin; damp places. Steephill Waterfall.

PETROSELINUM.

Umbel compound; fruit two-lobed, egg-shaped; 5 ridges; bracts few.

1.—**P. segetum.** (Corn Parsley.) Slender, branched

and tough; leaves scant, pinnate; umbel small, whitish. Not uncommon in chalky corn-fields.

SISON.

Umbel compound; fruit two-lobed; carpels 5 ridges; petals broad and notched, point bent inwards; several bracts.

1.—**S. amomum.** 2—3 feet high, slight, tough, branched; leaves pinnate, leaflets narrow; 2—4 bracts; flowers small and yellowish. Abundant on chalk.

ÆGOPODIUM.

Umbel compound; fruit in two lobes, oblong; carpels with 5 ridges; no bracts.

1.—**Æ. Podagraria.** (Common Gout Weed.) Root-creeping; leaves thrice three-lobed; serrated; flowers white. Between Shanklin and Ventnor.

BUNIUM.

Umbel compound; fruit two-lobed, oblong, crowned; carpels 5 ridges; bracts few.

1.—**B. flexuosum.** (Common Pig-nut.) Common in meadows; root edible and nut-like; leaves finely cut; flower white.

PIMPINELLA.

Umbel compound; fruit two-lobed, oblong, crowned; carpels 5 ridges, furrowed; no bracts.

1.—**P. Saxifraga.** (Burnet Saxifrage.) 1—2 feet high; leaves pinnate, upper ones narrow. Common in fields and pasture-lands; white.

All the above have flattened seeds.

ŒNANTHE.

Umbels compound, fruit egg-shaped, crowned; carpels with 5 ridges; flower spreading.

1.—**Œ. fistulosa.** (Tubular Water Dropwort.) Root with runners; leaves pinnate; stalk tubular; umbels few, rayed. Sandown Level.

2.—**Œ. crocata.** (Hemlock Water Dropwort.) Leaves triply pinnate, much cut; poisonous; many white umbels. Common.

3.—A third species is found on St. Helen's Salt Marshes.

FŒNICULUM.

Umbel compound; fruit elliptical; carpels with 5 ridges; no bracts.

1.—**F. vulgare.** (Common Fennel.) Well known by its scent; leaves feathery; umbel yellow. Ventnor Cliffs; uncommon.

CRITHMUM.

Umbel compound; fruit elliptical; carpels soft, with 5 ridges; numerous bracts.

1.—**C. maritimum.** (Samphire.) Fleshy leaves, glaucous; yellow umbel aromatic, and used for pickle. Common on Ventor and other cliffs.

All the above have seeds not flattened.

ANGELICA.

Umbel compound, fruit of 2 flattened carpels, 3 ridges; few bracts.

1.—**A. sylvestris.** (Wild Angelica). Stem furrowed; leaves twice pinnate; leaflets serrated, egg-shaped; umbel large, white, or pinkish; 2—4 feet high. Very common.

PASTINACA.

Umbel compound; 2 flattened carpels, 5 ridges; few bracts; flowers yellow.

1.—**P. sativa.** (Parsnip.) Much the same as the garden plant. Luccombe and Bonchurch.

HERACLEUM.

Umbel compound; fruit like the parsnip; umbel rigid, and bracts few; flowers white.

1.—**H. sphondylium.** (Cow Parsnip.) 4—6 feet high; rough broad leaves; sheathed.

DAUCUS.

Umbels compound; fruit prickly, flattened; carpels oblong; ridged; long bracts.

1.—**D. maritimus.** (Sea Carrot.) Umbel quite flat, pinkish, hoary; leaves much cut, feathery. Sea cliffs.

TORILIS.

Umbel compound; fruit prickly, ridged; numerous bracts.

1.—**T. Anthriscus.** (Upright Hedge Parsley.) Leaves doubly pinnate, cut, umbels stalled; 2—3 feet high; hairy; pinkish flowers. Very common.

ANTHRISCUS.

Umbels compound, fruit beaked; capels no ridges; few bracts.

1.—**A. sylvestris.** (Beaked Parsley.) Stem downy; leaves thrice pinnate; umbels terminal; 5 bracts; early spring. Very common.

CHÆROPHYLLUM.

Umbel compound, fruit beaked; carpels five-ridged; few bracts.

1.—**C. temulum.** (Rough Chervil.) 2—3 feet high, hairy, spotted; swollen at the joints; leaves

twice pinnate, deeply cut; umbel white, drooping in bud. Very common.

Order XXXII.—**ARALIACEÆ.** *Ivy tribe.*

Calyx attached to the ovary, four or five-cleft; petals 4—5, or 10, if present; stamens equal petals in number, or double the number; ovary more than 2 cells; styles equal to cells; fruit fleshy or dry, several one-seeded cells.

HEDERA.

Calyx five-cleft; petals 5—10; stamens 5—10 styles 5—10; berry five-celled, five-seeded.

1.—**H. Helix.** (Common Ivy.)

ADOXA.

Calyx three-cleft; corolla 4—5; stamens in pairs 8—10; anthers one-celled; berry four or five-celled.

1.—**A. Moschatellina.** (Moschatel.) 4—6 inches high; root leaves with a pair of smaller ones halfway up the stem; flowers in terminal heads of 5; greenish-yellow. The Landslip, Bonchurch.

Order XXXIII.—**CORNACEÆ.** *Cornel tribe.*

Sepals 4, attached to ovary; petals 4; stamens 4; ovary two-celled; stigma simple; fruit a berry, with two-celled nut; seeds single.

CORNUS.

1.—**C. sanguinea.** (Dog Wood.) A shrub, with stems red in autumn. Cymes of white flowers; leaves opposite, smooth, egg-shaped; berries purple, turning black; common in hedges and woods; not to be confused with the Viburnum or meal-tree.

ORDER XXXIV.—**LORANTHACEÆ.**

Stamens and pistils on different plants; stamens and petals 4—8; fruit pulpy, one-seeded.

VISCUM.

Viscum album. (Mistletoe.) Too well known to need a description; parasitical on many trees.

ORDER XXXV.—**CAPRIFOLIACEÆ.** *Woodbine tribe.*

Calyx attached to ovary, with bracts at the base; corolla four or five-cleft; stamens alternate with petals; ovary three or five-celled; stigmas 1—3; fruit fleshy, crowned.

SAMBUCUS.

Calyx five-cleft; corolla 5; stamens 5; stigmas 3; berry three or four-seeded.

1.—**S. nigra.** (Elder.) Stem woody; flowers in cymes yellowish; leaves pinnate, serrated; berries purple.

VIBURNUM.

Calyx five-cleft; corolla five-cleft; stamens 5; berry 1—3 cells.

V. Lantana. (Meal Tree.) Flowers in thick cymes; leaves ovate, serrated, white beneath; holds the dust; berries scarlet. Very common.

LONICERA.

L. Periclymenum. (Honeysuckle.) Calyx five-cleft and small; corolla tubular; stamens 5; leaves separate; flowers terminal. Trailing over every hedge.

ORDER XXXVI.—**RUBIACEÆ.** *Madder tribe.*

Calyx 4—6, or wanting; corolla 4—6, regular; stamens alternate with corolla lobes; ovary two-celled; styles two-cleft; carpel two-seeded.

RUBIA.

Corolla somewhat bell-shaped; stamens 4; fruit a berry having 2 lobes.

1.—**R. peregrina.** A climbing hedge plant with dark shiny leaves, in whorls of 4—6; flowers green, five-cleft; berries black in conspicuous clusters.

GALIUM.

Corolla wheel-shaped; stamens 4; fruit not crowned, two-seeded.

1.—**G. cruciatum.** (Cross Wort.) Leaves in whorl of 4; flowers small, yellow; upper ones with pistil, the lower stamens downy; 1—2 feet. Very common.

2.—**G. verum.** (Yellow Bed-straw.) Leaves 8 in a whorl; large clusters of yellow flowers. Very common.

3.—**G. Mollugo.** (Hedge Bed-straw.) Leaves 8 in a whorl, pointed; flowers in loose panicle, white; fruit smooth. Between Ventnor and Bonchurch. Frequent.

4.—**G. saxatile.** (Heath Bed-straw.) Leaves 6 in a whorl; stem prostrate below, much-branched, smooth; a small species with dense white panicle; dry sandy heaths.

5.—**G. tricorne.** Stem and leaves rough; flowers white, growing in threes; fruit reflexed; not uncommon on dry sandy heaths and banks.

6.—**G. Aparine.** (Goose-grass.) Leaves 6—8 in a whorl, rough; flowers 2—3, axillary; fruit rough with prickles; seeds stick to anything closely. Very common.

ASPERULA.

Corolla funnel-shaped; stamens 4; fruit two-lobed and two-seeded, *not* crowned.

1.—**A. odorata.** (Sweet Woodruff.) Leaves 8 in a whorl; flowers white, in panicles, which are terminal; fruit bristled. Moist woods; Shanklin.

2.—**A. cynanchica.** (Squinancy Wort.) Leaves 4 in a whorl; small plant with narrow leaves; flowers white or lilac. Dry banks near Ventnor.

SHERARDIA.

Corolla funnel-shaped; stamens 4; fruit two-lobed, two-seeded, crowned.

1.—**S. arvensis.** Leaves 6 in a whorl, spreading and pointed; flowers very small, bluish pink, in an umbel. Corn-fields, abundant.

ORDER XXXVII.—VALERIANACEÆ. *Valerian tribe.*

Calyx superior; corolla tubular, three or six-lobed; sometimes a spire at the base; stamens 1—5, inserted into the tube; ovary 1—3 cells; fruit crowned, one-seeded, 2 cells having no seeds.

CENTRANTHUS.

1.—**C. ruber.** Corolla spurred; 1 stamen; corolla five-cleft, deep red, fruit crowned; 1—2 feet high. Very plentiful throughout the Undercliff, and difficult to eradicate.

VALERIANA.

Corolla five-cleft, not spurred; stamens 3; fruit crowned.

1.—**V. officinalis.** Leaves pinnate; flowers light pink. Common in ditches and damp places.

FEDIA.

Corolla five-cleft; stamens 3; fruit crowned.

1.—**F. olitoria.** (Corn Salad.) Leaves long and narrow; flowers in terminal heads; capsule inflated, crowned; stem forked; flowers opaque, white.

2.—**F. dentata.** (Toothed Corn Salad.) Leaves decidedly toothed at the base; flowers in corymbs, with a sessile one in the fork. Corn-fields; common.

Order XXXVIII.—**DIPSACEÆ.** *Teasel tribe.*

Calyx attached to the ovary, surrounded with bracts; corolla 4—5, tubular; stamens 4, anthers not united style 1; stigma not cleft; fruit dry, one-seeded, crowned; flowers in heads.

DIPSACUS.

Bracts numerous, pointed; outer and inner calyx; fruit four-sided.

1.—**D. sylvestris.** (Wild Teasel.) Leaves opposite, united; bristles of receptacle not hooked; a handsome plant with prickly stem and large leaves Common. Pelham Woods, and elsewhere.

SCABIOSA.

Bracts numerous; outer calyx membranaceous, inner one five-bristled; receptacle scaly; fruit cylindrical.

1.—**S. succisa.** (Premorse Scabious.) Root abruptly cut off; corolla four-cleft; leaves ovate, not narrow up the stem, purplish blue. Ventnor Downs.

2.—**S. Columbaria.** (Small Scabious.) Corolla five-cleft; outer flowers largest; leaves pinnate and cut; lilac. Ventnor; Bonchurch; Appuldurcombe.

KNAUTIA.

Bracts numerous; outer calyx minute, four-toothed, inner one cup-shaped; receptacle hairy; fruit four-sided.

1.—**K. arvensis.** Root leaves simple, upper ones pinnate; heads convex, 2—3 feet high; pale purple or lilac. Very common; hedges and waste grounds.

Order XXXIX.—COMPOSITÆ. *Compound flowers.*

Flowers composed of little florets in terminal heads, surrounded by bracts, or involucre; calyx becoming a pappus; corolla of one petal, tubular or strap-shaped; stamens 5, united; ovary inferior, 1 to each style, one-celled; stigma simple or two-cleft; fruit a solitary seed, crowned.

Composite plants, or the Compositæ, are well expressed by the name, for each flower is literally composed of many florets enclosed in a common perianth. The number of species wild or cultivated in Great Britain is said to be nearly 3000, some highly ornamental, as dahlias, cinerarias, chrysanthemum, China asters, all more or less remarkable for their brilliant tints. The medicinal compositæ are the coltsfoot, camomile, tansy, wormwood, arnica, and others. The esculent and edible include the artichoke, salsafy, lettuce, and endive. The thistles are a group to themselves, far too prevalent on our grass and cultivated lands.

(1.) CICHORACEÆ. *Chicory group.*

All the florets strap-shaped, having stamens and pistils.

TRAGOPOGON.

Involucre simple, 8—10 scales, united below;

receptacle dotted; fruit rough, ridged, tapering; pappus feathery.

1.—**T. pratensis.** (Yellow Goat's-beard.) Involucre longer than corolla; leaves broad at the base, long and channelled; erect, with handsome buds, yellow flowers, which seldom expand; large pappus. Not uncommon.

HELMINTHIA.

Involucre 8, with 3—5 leaflike bracts; receptacle dotted; fruit rough, wrinkled; pappus feathery.

I.—**H. echioides.** (Bristly Ox-tongue.) Plant prickly all over and spotted; flowers yellow, with large bracts 2—3 feet high. Ventnor Cliffs.

PICRIS.

Involucre with 1 row of equal scales upright, several spreading ones at the base; receptacle slightly dotted; fruit rough and ridged; pappus in 2 rows, the inner one feathery.

1.—**P. hieracioides.** (Hawkweed Picris.) Slender and branched, 2—3 feet; stem rough and bristly; leaves narrow and toothed; flowers numerous, yellow, with scales on the stalk. Ventnor and Bonchurch.

APARGIA.

Involucre imbricated, outer scales black and hairy; receptacle dotted; fruit pointed; pappus of 1 row, feathery.

1.—**A. hispida.** (Rough Hawk-bit.) Leaves all growing from the root, pinnatifid, with 2 pointed bristles; flowers pale yellow, single. Common on the Downs.

2.—**A. autumnalis.** (Autumn Hawk-bit.) Leaves from the root, narrow and hairy; stalks many-flowered,

2—3 feet, deep yellow flowers; involucre downy. Pastures and downs.

THRINCIA.

Involucre of 1 row, few scales; receptacle dotted; fruit of outer florets hardly beaked; pappus chaffy; fruit of inner florets beaked.

1.—**T. hirta.** (Hairy Thrincia.) 4—6 inches high; leaves from the root, lobed, rough and bristled; stem hairy, each with yellow flowers. Very common.

HYPOCHÆRIS.

Involucre imbricated, receptacle chaffy; fruit rough; pappus feathery, with short bristles outside.

1.—**H. radicata.** (Long-rooted Cat's Ear.) Leaves all from the root, pinnatifid, lobes pointing back; stem branched, smooth, scales below the yellow flowers. Sandown and Shanklin.

LACTUCA

Involucre imbricated, scales membranous at the margin, few-flowered; receptacle naked; fruit flattened and beaked; pappus hairy.

1.—**L. muralis.** (Wall Lettuce) Only 5 florets; leaves large and pinnatifid, cut and lobed; panicles spreading; yellow flowers. Brading; Shanklin.

SONCHUS.

Involucre imbricated, with several rows of scales; receptacle naked; fruit flattened and wrinkled; pappus hairy.

1.—**S. oleraceus.** (Sow Thistle.) Very common, yellow and prickly leaves; a thick white juice in the stem.

2—**S. arvensis.** (Corn Sow Thistle.) Lower

leaves pinnatifid, pointing backwards; stem simple; large flowers. Corn-fields.

CREPIS.

Involucre double; receptacle naked; fruit not flattened, tapering; pappus a tuft of white down.

1.—**C. virens.** (Smooth Hawk's-bit.) Leaves smooth and pinnatifid, pointing backwards, narrow; flowers numerous, yellow; very abundant; varies in growth from 6 inches to 2 feet.

HIERACIUM.

Involucre imbricated, with oblong scales; receptable dotted; fruit angular, ridged; pappus bristly, sessile, and not white.

1.—**H. Pilosella.** (Mouse-ear Hawkweed.) Single flowered; creeping shoots; leaves from the root, entire and hairy. Common.

2.—**H. umbellatum.** (Narrow-leaved Hawkweed.) Having flowers in a corymb. Rookley Wilderness; not common.

There are several other species of Hawkweed.

LEONTODON.

Leaves all from the root; involucre reflexed.

1.—**L. Taraxacum.** The common Dandelion. Every waste place.

LAPSANA.

Involucre a single row of erect scales; 4 or 5 smaller ones at the base, with few flowers; receptacle naked; fruit flattened and furrowed.

1.—**L. communis.** (Nipple Wort.) Leaves on long stalks, heart-shaped; branched; flowers numerous, small, and light yellow. Very common.

CICHORIUM.

Involucre in 2 rows, inner of 8 scales, bending back, out of 5 scales; receptacle naked, hairy; pappus a double row of chaffy scales.

1.—**C. Intybus.** (Succory.) Stem hard to break; flowers bright blue. St. Lawrence (?); rare.

(2.) CYNAROCEPHALÆ. *Thistle group.*

Florets tubular, five-cleft; stamens and pistils usually forming a convex head; style jointed below to stigma.

ARCTIUM.

Involucre with scales having curved points; receptacle chaffy; fruit four-sided; pappus short.

1.—**A. Lappa.** (Burdock.) A stout plant, with fine boldly-shaped leaves; round heads of purple flowers. The burs catch everything, and cling to the clothes. Common.

CARDUUS.

Involucre swollen, imbricated; receptacle bristly; pappus hairy, blown about by winds, and falling as seed.

1.—**C. nutans.** (Musk Thistle.) Solitary flowers, drooping; involucre rigid, bent back; stem with thorny leaves; 2 feet high; handsome purple plant. Very common.

2.—**C. tenuiflorus.** (Slender-flowered Thistle.) Heads in clusters; scales of involucre prickly and erect; stem with prickly leaves, downy beneath; flowers pink, 2—4 feet high. St. Helen's.

3.—**C. acanthoides.** (Welted Thistle.) In clusters, round; scales of involucre thorny, erect; stem

and leaves thorny; branched; deep purple flowers 3—4 feet. Common.

CNICUS.

Same characters as Carduus, with pappus feathery.

1.—**C. lanceolatus.** Usually solitary heads, stalked; scales of involucre prickly, spreading, and woolly; stem and leaves prickly, the latter lobed, which are two-cleft; 3—4 feet high; leaves downy beneath, dull purple. Very common.

2.—**C. palustris.** (Marsh Plume Thistle.) Flowers in clusters; scales of involucre adhering; thorny stem and leaves; 4—10 feet; purple. Very common in marshes.

3.—**C. arvensis.** (Creeping Plume Thistle.) Heads of flowers numerous, stalked; scales of involucre adhering; stem not winged; root creeping; 2 feet high; flowers light purple, scented. Common.

4.—**C. acaulis.** (Dwarf Plume Thistle.) Heads solitary, stemless; leaves prickly; purple flower. Chale. Several other varieties are found occasionally.

CARLINA.

Similar characteristics, inner scales being chaffy, coloured, and spreading.

1.—**C. vulgaris.** Inner scales straw-coloured; leaves very prickly; florets red, anthers yellow; single heads. Common.

CENTAUREA.

Involucre imbricated; receptacle bristly; pappus hairy, or absent; outer florets with neither stamens nor pistils.

1.—**C. nigra.** (Black Knapweed.) Outer scales

egg-shaped, fringed ; lower leaves toothed, upper ones narrow ; pappus short and tufted ; dull purple. Bonchurch ; Shanklin.

2.—**C. scabiosa.** (Greater Knapweed.) Outer scales egg-shaped, fringed : leaves pinnatifid, rough, tapering ; bright purple flowers, and light coloured scales. Very common.

3.—**C. Cyanus.** (Blue Bottle.) One of our best-known flowers, the bright blue Centaurea of our cornfields.

(3.) TUBIFLORÆ. *Tansy group.*

All florets tubular, five-cleft, with stamens and pistils in a flat head ; style not joined below the stigma.

BIDENS.

Fruit crowned with 2—3 bristles, rough, and pointing downwards.

1.—**B. cernua.** (Nodding Bur-Marigold.) Heads drooping ; leaves entire, serrated ; flower brownish yellow ; in ditches. Sandown and Shanklin.

2.—**B. tripartita.** (Trifid Bur-Marigold.) Heads erect ; leaves deeply three-lobed. Sandown Level.

EUPATORIUM.

Dense heads of flowers ; involucre imbricated ; receptacle naked ; styles longer than florets.

1.—**E. cannabinum.** (Hemp Agrimony.) 3—6 feet high ; downy ; stem reddish ; leaves 3—5 cut ; terminal corymbs dull lilac ; styles deeply cleft. Very common.

TANACETUM.

Involucre cup-shaped, imbricated ; receptacle naked ; fruit crowned with chaffy border.

1.—**T. vulgare.** (Tansy.) 3—6 feet high ; bright

yellow flowers in terminal corymbs, button-like; leaves deeply cut, and twice pinnate. Chale and Blackgang.

ARTEMISIA.

Involucre imbricated, with few flowers; no pappus.

1.—**A. Absinthium.** (Wormwood.) Leaves deeply cut, segments blunt; heads drooping, round, and dull yellow; aromatic. Common.

2.—**A. vulgaris.** (Mugwort.) Leaves pinnatifid, acute segments; white and downy beneath, green above; no scent. Common.

PETASITES.

Involucre a single row of scales; receptacle naked; barren and fertile flowers on different plants.

1.—**P. vulgaris.** (Butter-Bur.) Common in damp ditches; fragrant; a curious dull lilac or pink colour; leaves like bracts.

A second species, P. fragrans, is found in the Island with flowers small as coltsfoot, only pink. The leaves are large and spreading as coltsfoot, and it flowers early in the spring. Near old church, Bonchurch; in abundance.

(4.) RADIATÆ. *Daisy group.*

Central florets tubular, five-cleft, having stamens and pistils; outer florets strap-shaped, radiated, with pistils only.

TUSSILAGO.

Root creeping; leaves cordate.

1.—**T. Farfara.** The common coltsfoot, flowering before the leaf appears. Damp railway cuttings, &c.

ASTER.

Involucre imbricated, a few scales on the stalks; pappus hairy, in several rows; receptacle naked.

1.—**A. Tripolium.** (Sea Starwort.) Abundant in Brading Salt Marshes. Yellow centre and purple rays; leaf long and narrow.

SOLIDAGO.

Involucre and receptacle like aster; pappus in 1 row.

1.—**S. Virgaurea.** 2—3 feet high; leaves simple; clusters of bright yellow flowers; stem angular. Dry heaths; not uncommon.

SENECIO.

Groundsels and ragworts. Too well known to need any description.

Two species of groundsel are common, and two ragworts, one only in marshes.

INULA.

Involucre imbricated; receptacle naked; florets all yellow; anthers bristled; pappus hairy, in 1 row.

1.—**I. Helenium.** (Elecampane.) A handsome plant, with large oblong, serrated leaves; few terminal heads of large flowers. Not common. Luccombe.

PULICARIA.

Involucre imbricated in few rows; pappus in 2 rows.

1.—**P. dysenterica.** (Common Flea-bane.) Stem woolly; leaves somewhat heart-shaped, embracing the stem; involucre spiky; bright yellow. Abundant.

2.—**P. vulgaris.** (Small Flea-bane.) Hairy with narrow leaves, growing best where water has been. Uncommon. St. Helen's Green.

BELLIS.

The common, yet always welcome daisy.

CHRYSANTHEMUM.

Stem branched; root-leaves ovate, with petioles.

1.—**C. Leucanthemum.** The white Ox-eye Daisy of our meadows.

2.—**C. segetum.** (Yellow Ox-eye.) Corn-fields near Shanklin; yellow; leaves glaucous.

MATRICARIA.

Involucre cup-shaped; scales membranaceous; receptacle naked; florets white, disk yellow; no pappus.

1.—**M. Parthenium.** (Feverfew.) Leaves pinnate, stalked; deeply cut; flower in corymb; leaves delicate green; flower white, yellow centre. Steephill; Luccombe.

2.—**M. inodora.** (Corn Feverfew.) Leaves feathery and sessile; flowers solitary. Very common.

ANTHEMIS.

Involucre cup-shaped, scales membranaceous; receptacle chaffy; no pappus, but chaffy border.

1.—**A. nobilis.** (Chamomile.) Prostrate; leaves cut in hair-like segments; flowers white, yellow centre, Lake; Sandown.

2.—**A. Cotula.** (Stinking Chamomile.) Erect and branched; leaves in hair-like segments; disagreeable smell if crushed; heads solitary; larger than last. Wet places.

ORDER XL.—CAMPANULACEÆ. *Bellflower tribe.*

Calyx from the ovary, five-cleft; corolla of one petal, five-lobed; stamens alternate with lobes; anthers seldom united; ovary inferior, 2 or more, many-seeded cells;

style 1, hairy; stigma simple; fruit crowned; herbaceous plants; hardly represented in the Island flora.

The Campanulaceæ are a handsome order of flowers, blue being the prevailing colour. Although there are eleven genera, more than half the 220 species belong to the typical genus Campanula. The pretty little ivy-leaved campanula is characteristic of Devonshire woods and lanes; but the Canterbury-bell and nettle-leaved bell-flower are known to every one. By the side of Welsh mountain streams the latter may be seen to perfection in the month of August, making the banks brilliant with their showy blue flowers. The fragile little Hair-bell needs no description, but there are several species not unlike the Hair-bell among the chief glories of the Alpine flora.

CAMPANULA.

Corolla usually five-cleft; stigma two or five-cleft; capsule opening by the side.

1.—**C. rotundifolia.** (Hair-bell.) The only truly wild species we can boast of; common, and very well-known.

JASIONE.

Corolla wheel-shaped; 5 lobes; stigma two or three-cleft; capsule two or three-celled.

1.—**J. montana.** (Sheep's-bit.) Like a Scabious, but distinguished by its united anthers; leaves blunt and hairy; flowers pale blue, in terminal heads. Shanklin Chine.

Order XLI.—VACCINIACEÆ. *Cranberry tribe.*

Calyx from the ovary, 4—6 lobes; corolla of 1

petal, 4—6 lobes; stamens free, twice number of the lobes, inserted on the disk of the corolla; anthers opening with 2 valves; bristled; ovary 4—10 cells; cells many-seeded; fruit a berry crowned.

The Vacciniaceæ or Cranberry order are plants producing a berry-like fruit. The marsh species grows in bogs in Russia, Sweden, Germany, and the north of England, and is very rare with us. The American cranberry of Canada and Virginia is a larger fruit, and grows on high sandy lands. Russian cranberries are largely exported to this country, and are much used in making tarts, &c. From Hudson's Bay another species has been introduced, the plant about the same size as our English species, but with fruit six or seven times as large. Cranberries will keep for a long time if preserved in fresh and pure water. The fruit is highly acid and of peculiar flavour. The blossoms are small, consisting of four distinct petals, rolled back to the base, and of a beautiful deep flesh colour. The order is nearly allied to the heaths.

VACCINIUM.

Calyx four or five-lobed; corolla bell-shaped, four or five-cleft; stamens 8—10; berry four or five-celled.

1.—**V. Myrtillus.** (Bilberry.) Leaves not evergreen, egg-shaped, serrated; flowers solitary and drooping; berries black with a bloom. Ventnor and Shanklin Downs.

2.—**V. Oxycoccos.** (Marsh Cranberry.) Leaves evergreen, anthers not bristled; stem prostrate; leaves egg-shaped, glaucous beneath; corolla four-cleft; red flowers; rare. Rookley Wilderness.

ORDER XLII.—**ERICACEÆ.** *Heath tribe.*

Calyx four or five-cleft, inferior; corolla 1 petal, four or five-cleft; stamens equal number or twice as many; anthers dry, bristled; ovary not adhering, many-seeded; style 1; stigma 1; fruit a dry capsule.

ERICA.

Calyx deeply four-cleft: corolla bell-shaped; stamens 8; capsule four-celled.

1.—**E. Tetralix.** (Cross-leaved Heath.) Leaves opposite, 4 in a whorl; flowers in pink, waxy, terminal heads to one side. Rookley Wilderness.

2.—**E. cinerea.** (Fine-leaved Heath.) Leaves in threes, narrow flowers in whorled, leafy clusters; deep pink. Abundant on dry heaths.

CALLUNA.

A shrub; leaves imbricated in 4 rows.

C. vulgaris. (Ling.) The common Heather of our moors; distinguished by fine green bracts below the calyx. Kennerly Heath.

ORDER XLIII.—**MONOTROPACEÆ.** *Bird's-nest tribe.*

Sepals 4—5, soon falling; corolla deeply four or five-cleft; stamens 8—10; anthers with pores; ovary four or five-celled; style 1; stigma lobed; fruit a dry capsule.

MONOTROPA.

1.—**M. Hypopitys.** (Pine Bird's-nest.) Parasitical at the roots of trees; bracts in place of leaves; brownish flowers. Landslip (?); rare.

ORDER XLIV.—**AQUIFOLIACEÆ.** *Holly tribe.*

Sepals 4—6; corolla 4—6; stamens alternate, with corolla lobes; fruit a fleshy berry, 2—6 seeds.

Calyx 4—5; stamens 4—5; berry with several hard seeds.

ILEX.

1.—**I. Aquifolium.** The holly, common in thickets.

Order XLV.—OLEACEÆ. *Olive tribe.*

Calyx divided, not falling off; corolla of 1, four or eight-cleft, sometimes wanting; ovary two-celled; two-seeded; style 1; berry-like fruit.

The corolliflorous order Oleaceæ is of great importance, the far-famed olive being the typical genus. It has never been successfully cultivated north of latitude 45°, though apparently extreme heat is injurious to the tree as well as cold. All travellers in the south of Europe are familiar with the monotonous dark green foliage of the olive, a picturesque tree only when old enough for the trunk to develope the fantastic and gnarled shapes for which they are famous. The fruit is a fleshy drupe, almost the only one having an oily pulp. The growth of the olive is exceedingly slow; the old proverb, "No man who has planted an olive has ever tasted the fruit," is not literally true, but illustrative of the slow growth. The crop is ripe about the end of November, but abundant on an average, only every other year. The ash, privet, and lilacs are included in the order, although the ash differs so widely from the other genera that it might almost be placed in a separate order.

LIGUSTRUM.

Corolla tubular, four-cleft; calyx four-cleft; fruit a two-celled berry.

L. vulgare. The common Privet, with shiny black

berries; narrow leaves; sickly smelling. Wroxall; Brading Woods, and other places.

FRAXINUS.

Corolla and calyx wanting; fruit a two-celled capsule.

1.—**F. excelsior.** The Ash, a common tree.

Order XLVI.—GENTIANACEÆ. *Gentian tribe.*

Calyx usually five-cleft; corolla of 1 petal, five-lobed; twisted when in bud; stamens usually 5, alternate with corolla lobes; ovary of 2 carpels, one or two-celled; style 1; stigma 2; fruit many-seeded.

The Gentians belong to a genus of plants of the natural order Gentianaceæ, with five-cleft—sometimes four-cleft calyx, and one-celled capsule. The species are numerous, and are found in temperate parts of Europe, Asia, and America, many of them growing in high mountain pastures, which they adorn by their beautiful blue or yellow flowers. The genus is said to derive its name from Gentius, King of Illyria, B.C. 160, to whom is ascribed the introduction into use of the species still used in medicine. The genus Gentiana is pre-eminent in its order for beauty and utility. About sixty species have been cultivated in Britain. The part employed in medicine is the root, which is cylindrical, and more or less branched; and which appears in commerce in a dried state, in pieces varying from a few inches to a foot in length. Gentian is a highly-valued medicine, a simple tonic, bitter, without astringency, and is much used in diseases of the digestive organs. The flowers of the gentians are very large as compared to the body of the plant, and have an exquisitely outlined campanulate shape. The spring gentian (G. verna) is perhaps the best-

known, as it is one of the most beautiful of the genus. The normal plant grows wild on some of the barren mountains of England, and forms an excellent edging to the flower-border, opening its large azure blossoms in April, as one of the most gorgeous floral glories of our spring. The order Gentianaceæ contains upwards of 450 known species, many of which—besides the gentians—have valuable medicinal properties, such as the buckbean and centaury.

GENTIANA.

Calyx four or five-cleft; corolla funnel or salver-shaped; stamens 5, rarely 4.

1.—**G. Amarella.** (Autumn Gentian.) Erect; branched; several flowers, which are salver-shaped, and five-cleft; purple. Ventnor Downs.

2.—**G. campestris.** (Field Gentian.) A similar plant, with corolla four-cleft. Ventnor Downs.

ERYTHRÆA.

Calyx five-cleft; corolla funnel-shaped, five-cleft; stamens 5; anthers twisted; capsule two-celled.

1.—**E. Centaurium.** (Common Centaury.) Erect and forked; tufts of rose-coloured flowers; leaves ribbed but smooth, opposite; expand in the sun only. Downs.

2.—**E. pulchella.** A dwarf species found on Bembridge Downs; Landslip.

CHLORA.

Corolla and calyx eight-cleft; stamens 8; stigma two or four-cleft.

1.—**C. perfoliata.** (Perfoliate Yellow Wort.) A very handsome bright yellow flower, expanding in the sun. Stem passes through each pair of leaves, which are glaucous. Downs and cliffs.

MENYANTHES.

Calyx five-cleft; corolla funnel-shaped, five-lobed, and fringed; stamens 5; stigma two-lobed.

1.—**M. trifoliata.** (Bog Bean.) Leaves broadly three-lobed; flower pinky-white, and very beautiful because of the delicate fringe. Bogs; not common. Godshill and Rookley Marshes.

ORDER XLVII.—**CONVOLVULACEÆ.** *Bindweed tribe.*

Calyx 5; imbricated and unequal; corolla of 1 petal, plaited; stamens 5; ovary two to four-celled; few-seeded; style 1; stigmas 2; capsule one to four cells.

CONVOLVULUS.

Corolla trumpet-shaped, with 5 plaits and 5 lobes; no bracts: capsule two-celled.

1.—**C. arvensis.** (Field Bindweed.) Climbing; leaves arrow-shaped; flowers 1—3, together; rose colour; common; minute bracts.

CALYSTEGIA.

Calyx in 2 bracts; style 1; stigmas 2; capsule one-celled, two-valved.

1.—**C. Sepium.** (Great Bindweed.) A pernicious weed, difficult to exterminate; large pure white flowers; large bracts. Common.

2.—**C. Soldanella.** (Sea Bindweed.) Leaves fleshy and kidney-shaped; flowers solitary, large, striped with deep pink; stem four-sided; bracts large; growing in the sand. Rare. St. Helen's Spit.

CUSCUTA.

Calyx four or five-cleft; corolla bell-shaped, four or five-cleft; 4—5 scales within.

1.—**C. Epithymum.** (Lesser Dodder.) A rare para-

site. A tangled mass of pink thread-like stems and pink-white flowers; occasionally on furze bushes. Ventnor.

ORDER XLVIII.—**BORAGINACEÆ.** *Borage tribe.*

Calyx four or five-cleft, not falling off; corolla 1 petal; stamens 5, alternate with corolla lobes; ovary four-cleft, four-seeded; style 1; fruit 2 or 4 seeds, each enclosed; leaves alternate, bristly

The genus Borago is perhaps one of the truest types of an order in modern botany, for all plants in the Boraginaceæ or Borage tribe have the most marked characteristics of the typical genus. The plants are covered with stiff white hairs, and are rough-leaved. They have also the same insipid juice. No less than 280 species of the order are indigenous to Great Britain, which are grouped in twenty-six genera. From time immemorial borage has been used as an ingredient in claret or Moselle cup. The genus Lithospermum (Gromwell) is remarkable for its curious seeds, of which Dr. Bromfield gives a good description in his "Flora Vectensis:"—"The seeds are about a line and a half in length, pointed at the apex, bluish or greyish white, or brownish yellow. The testa is extremely hard, smooth, and polished, resembling porcelain, and enclosing a jet-black, wrinkled, and shining nucleus. The seeds, which resemble miniature eggs of porcelain, would, from the stony hardness of the shell, be long in vegetating, were not the latter endued with the faculty of spontaneously falling to pieces, and so exposing the embryo to air and moisture." The Pulmonaria, or Lungwort, is a rare British species, but found sparingly with us in the Isle of Wight. It is easily identified by its spotted leaves.

ECHIUM.

Corolla irregular; stamens unequal in length.

1.—**E. vulgare.** (Viper's Bugloss.) Very prickly; leaves narrow; flowers in lateral spikes; 2—3 feet high; brilliant blue; calyx before flowering pinkish. Not very common. Near Shanklin.

PULMONARIA.

Calyx tubular, five-cleft; corolla funnel-shaped; stamens enclosed in corolla.

1.—**P. angustifolia.** A plant rather peculiar to the tertiary parts of the Isle of Wight and Hampshire. Spotted leaves; terminal heads of blue flowers.

LITHOSPERMUM.

Calyx deeply five-cleft; corolla funnel-shaped, with 5 scales; seeds stony.

1.—**L. arvense.** (Corn Gromwell.) Branched; narrow leaves; seed wrinkled; bristly; small white flowers. Corn-fields

SYMPHYTUM.

Calyx deeply five-cleft; corolla bell-shaped; 5 scales.

1.—**S. officinale.** (Comfrey.) Stem winged; leaves pointed; flowers in 2 forked clusters; 2—3 feet high; thick foliage; white, pink, or purple; by streams. Sandown; Godshill.

BORAGO.

Calyx deeply five-cleft; corolla wheel-shaped; petals sharply pointed; 5 scales; stamens divided.

1.—**B. officinalis.** (Borage.) A stout herbaceous plant, covered with white prickles; deep blue flowers; black anthers. Common.

LYCOPSIS.

Calyx deeply five-cleft; corolla salver-shaped, blunt scales.

1.—**L. arvensis.** (Small Bugloss.) Leaves almost thistle-like; flowers in forked clusters of beautiful bright blue, with tube of corolla curiously bent. Common.

MYOSOTIS

Calyx five-cleft; corolla salver-shaped, twisted i bud; blunt scales.

1.—**M. palustris.** (Forget-me-not.) Root creeping; calyx with bristles; light green, roughish leaves; bright blue one-sided flowers. French Mill; Godshill. Abundant, and very fine.

2.—**M. arvensis.** (Scorpion Grass.) An insignificant little blue flower. Small hairy leaves. Very common.

3.—**M. versicolor.** (Party-coloured Scorpion Grass.) Calyx bristly; clusters of flowers on long leafless stalk; flowers blue and yellow on same plant. Common.

4.—**M. collina.** A very small species, frequently overlooked. Not uncommon. Flowers bright blue.

CYNOGLOSSUM.

Calyx five-cleft; corolla funnel-shaped, with scales; seed flattened, prickly.

1.—**C. officinale.** (Hounds' Tongue.) An evil-smelling plant, with glossy-white leaves, and dull red flowers, which are numerous. Common by roadside.

ORDER XLIX.—**SOLANACEÆ.** *Nightshade tribe.*

Calyx 5, rarely four-cleft; inferior; corolla 1 petal;

plaited in bud; stamens alternate with corolla-lobes; anthers opening by pores; ovary 2; style 1; stigma simple; seed numerous, in two or four-celled capsules.

SOLANUM.

Corolla wheel-shaped, five-cleft, reflexed; berry round, 2 or more cells.

1.—**S. Dulcamara.** (Woody Nightshade.) Generally mistaken for the Deadly Nightshade. Purple flowers, yellow anthers; creeping; red berries, which are poisonous.

2.—**S. nigrum.** (Black Nightshade.) Leaves egg-shaped, toothed; flowers drooping; white flowers; black berries. Waste places; common. The Atropa, or Deadly Nightshade is not found on the Undercliff.

HYOSCYAMUS.

Carolla funnel-shaped, five-lobed; capsule two-celled; closing with a lid.

1.—**H. niger.** (Henbane.) A deadly plant; large, viscid, hairy leaves; cream-coloured flowers, dark in the centre, in clusters. Rare. Bonchurch; Ventnor.

Order L.—**OROBANCHACEÆ.** *Broom Rape tribe.*

Calyx divided, not falling off; corolla irregular, usually two-lipped, imbricated in the bud; stamens 4, 2 long, 2 short; anthers pointed, or bearded at base; ovary in fleshy disc, many-seeded; style 1; stigma two-lobed; capsule two-valved; seeds 2—4 rows. Curious brown parasitical plants on ivy and other things.

OROBANCHE.

Calyx of 2 lateral sepals; 1—3 bracts; corolla four or five-cleft, not falling off.

1.—**O. minor.** (Lesser Broom Rape.) Stamens hairy above, smooth below; styles smooth. Sandown Barracks; Shanklin.

2.—**O. Hederæ.** (Ivy Broom Rape.) The commonest Isle of Wight species, tube of corolla curved, upper lip two-lobed; yellowish brown. Landslip, and other places.

3.—**O. cærulea.** (Purple Broom Rape.) Rare; flowers each with 3 bracts; purple corolla. Yaverland.

LATHRÆA.

Calyx bell-shaped, four-cleft; corolla two-lipped, with one entire.

1.—**L. Squamaria.** (Toothwort.) On the roots of hazel, with tooth-shaped scales up the stem; one-sided flowers, which are purplish; branched underground only. Very rare. Gatcombe.

Order LI.—SCROPHULARIACEÆ. *Figwort tribe.*

Calyx four to five-lobed, not falling off; corolla irregular, mostly two-lipped; stamens 4, 2 long, 2 short, or 2—5; ovary two-celled; style 1; stigma two-lobed; capsule two-celled, two or four-valved.

The order Scrophulariaceæ comprises a number of both ornamental garden plants, such as the calceolaria, pentstemon, antirrhinum, and indigenous genera, such as the foxglove (one of the most powerful drugs in the Materia Medica), toad-flax, mullein, veronica, louse-wort, and the figwort, the type of the order. It is astonishing to find the varied calceolarias grouped with the common figwort, but an examination of the monopetalous, somewhat labiate flowers, growing in a

loose spike, and common to both plants, will prove how nearly allied they are.

DIGITALIS.

Calyx five-cleft; corolla not spurred.

1.—**D. purpurea.** (Foxglove.) Common on every heath or moor. Very poisonous.

LINARIA.

Calyx five-parted, corolla spurred, mouth closed; capsule oblique.

1.—**L. Cymbalaria.** (Ivy-leaved Toad Flax.) A pretty creeping plant with pale lilac flowers, like a minute snapdragon. Common on old walls; St. Lawrence.

2.—**L. vulgaris.** (Yellow Toad Flax.) Pointed leaves, glaucous; bright yellow. Common in hedges and corn-fields.

3.—**L. minor.** (Least Toad Flax.) Erect, branched; flowers axillary; calyx larger than spur; yellowish. Whitecliff Bay.

L. spuria. (Fluellen.) Leaves downy; flowers yellow and violet. Dry fields.

SCROPHULARIA.

Calyx five-lobed; corolla with 2 shut lips, upper one two-lobed, small scale within; capsule two-valved.

1.—**S. nodosa.** (Knotted Figwort.) Angular stem; leaves cordate, smooth, purple flowers. Very common.

2.—**S. aquatica.** (Water Figwort.) Stem winged at each angle; leaves ovate; dark purple. Common in streams.

MELAMPYRUM.

Calyx tubular, four-toothed; corolla, upper lip

MELAMPYRUM ARVENSE *(P.89.)*

L. Reeve & Cº London

turned back, lower lip three-cleft; capsule oblong, pointed; seed 1 or 2 in each cell.

1.—**M. pratense.** (Yellow Cow-wheat.) Leaves in pairs, bracts; flowers yellow and axillary. Common in woods.

2.—**M. arvense.** (Purple Cow-wheat.) Flowers in spikes, yellow, with dense rose-coloured calyx. Above the Pelham Woods; a rare plant.

PEDICULARIS.

Calyx inflated, segments leaf-like; corolla two-lipped; upper one plain, lower one three-lobed; capsule flattened; seeds angular.

1.—**P. palustris.** (Red Rattle.) Stem solitary, branched above; calyx hairy; pink flowers in a loose spike; leaves deeply cut. Rookley Marshes. Uncommon.

2.—**P. sylvatica.** (Dwarf Red Rattle.) Prostrate; branching; calyx smooth; pink. Damp fields; common.

RHINANTHUS.

Calyx inflated, four-lobed; corolla two-lipped, upper one plain, lower one three-lobed; capsule flattened; seeds numerous.

1.—**R. Crista-Galli.** (Yellow Rattle.) Leaves narrow, serrated; flowers in loose spikes, yellow, ripe seeds rattle in the husk. About Shanklin.

EUPHRASIA.

Calyx tubular, four-cleft; corolla with upper lip divided, lower one three-lobed, anthers spurred; capsule flattened; seeds numerous and ribbed.

1.—**E. officinalis.** (Eye-bright.) A small plant with deeply-cut serrated leaves; flowers white, veined with purple. Banks near the sea; very plentiful.

VERONICA.

Corolla wheel-shaped, four-cleft; lower segment narrow; stamens 2.

1.—**V. serpyllifolia.** (Thyme-leaved Speedwell.) Leaves egg-shaped, smooth, notched, three-ribbed; capsules shorter than style; light blue flowers, with dark veins. Common.

2.—**V. arvensis.** (Wall Speedwell.) Leaves ovate, serrated bracts; light blue flowers; plant downy. Common.

3.—**V. Chamædrys.** (Germander Speedwell.) Stem with hairy lines; leaves sessile, capsule shorter than calyx; axillary clusters of bright blue flowers. Every bank.

4.—**V. montana.** (Mountain Speedwell.) Stem hairy, procumbent; leaves ovate, serrated; flowers few, pale lilac, veined. Woods.

5.—**V. officinalis.** (Common Speedwell.) Flowers in spikes; stem creeping; pale blue flowers. Downs.

6.—**V. Beccabunga.** (Brooklime.) Smooth, leaves oval, lateral clusters of deep blue flowers. Ditches; common.

7.—**V. Anagallis.** (Water Speedwell.) Smooth, leaves lanceolate, serrated; clusters opposite, erect and stout plant; pale coloured flowers. Not common; St. Lawrence Pond. Several other common varieties abound.

VERBASCUM.

Calyx five-cleft; corolla wheel-shaped, five-cleft; stamens hairy, 5.

1.—**V. Thapsus.** (Great Mullein.) Leaves white and flannel-like; stem tough, 2—5 feet, with dense spikes of yellow flowers, 2 stamens larger than the rest. Common.

ORDER LII.—**LABIATÆ.** *Labiate tribe.*

Calyx tubular, two-lipped, regular; corolla irregular, two-lipped, lower lip larger, and three-lobed; stamens 4, 2 longer than the others, sometimes wanting; ovary four-lobed; style 1; stigma two-cleft; 4 seeds, each enclosed; square stems, leaves opposite.

The Labiatæ are a large order of plants distinguished by the gaping two-lipped flowers. The flowers are mostly produced in whorls, and have square stems, all, or nearly all, are aromatic. The herbs of our gardens, such as mint, marjoram, rosemary, balm, thyme, and lavender are all labiate flowers. Some species are strikingly handsome, as the wild balm and Galeopsis vesicolor, or bee-nettle, which is almost as like a bee as the bee-orchis. Camphor is contained in many labiate plants in small proportions; in lavender to such an extent, that it is a question whether separating it might not prove a profitable process.

LYCOPUS.

Calyx five-cleft; corolla four-cleft; stamens 2.

1.—**L. Europæus.** (Gipsy Wort.) Leaves deeply cut, pale flesh-colour; flowers in the axil of the leaves. Godshill Marshes.

SALVIA.

Calyx two-cleft; corolla wide; stamens 2; filaments forked.

1.—**S. verbenaca.** (Wild Sage.) Blunt crenate leaves; corolla short; aromatic plant, with purple flowers in a long spike; leaves few, heart-shaped, acute bracts. Common.

MENTHA.

Calyx equal, five-toothed; corolla regular, four-cleft; short tube.

1.—**M. rotundifolia.** (Round-leaved Mint.) Leaves sessile, wrinkled, smooth above; flowers in dense round spikes, lilac. St. Lawrence.

2.—**M. hirsuta.** (Hairy Mint.) Leaves stalked; flowers in whorls 1—2 feet high, lilac. Common in ditches; other varieties of Mentha are not uncommon.

THYMUS.

Calyx two-lipped; ten or thirteen-ribbed, hairy; corolla two-lipped, lower one three-lobed; flowers in heads.

1.—**T. Serpyllum.** (Common Wild Thyme.) Very common on dry banks; purplish-pink flowers.

ORIGANUM.

Calyx five-toothed, ten or thirteen-ribbed, throat hairy; flowers in spikes, imbricated with bracts, lips nearly equal.

1.—**O. vulgare.** (Marjoram.) Leaves egg-shaped, downy; heads of purple flowers, with long bracts; deep red in bud. Dry pastures; Pelham Woods.

AJUGA.

Calyx five-cleft; corolla with upper lip very short, lower one three or four-cleft.

1.—**A. reptans.** (Bugle.) Erect, lower leaves stalked, upper ones sessile; creeping runners; lower lip four-cleft; flowers in a whorled spike, blue. Very common.

TEUCRIUM.

Calyx five-cleft; corolla, upper lip two-cleft, lower three-cleft, upper lipvery short.

1.—**T. Scorodonia.** (Germander.) Leaves heart-shaped, crenate, downy; flowers in one-sided racemes, pale yellow. Pelham Woods.

BALLOTA.

Calyx funnel-shaped, five-cleft; corolla 2 unequal lips; stamens larger than tube, lower lip three-lobed.

1.—**B. nigra.** (Black Horehound.) Leaves downy, crenate, serrated; flowers numerous, purple. St. Lawrence; Ventnor.

GALEOBDOLON.

Calyx five-cleft, five-ribbed; corolla unequal, lower lip three-lobed, acute; 4 stamens, 2 longer.

1.—**G. luteum.** (Yellow Dead Nettle.) A handsome yellow flower, red spotted; leaves ovate, bright green. Common in woods; Rew copses.

GALEOPSIS.

Calyx five-toothed, bell-shaped; corolla inflated, unequal, lower lip three-lobed, with 2 teeth, 2 stamens longest.

1.—**G. Tetrahit.** (Hemp Nettle.) Stem bristly, branches opposite; corolla twice length of calyx; purple or white flowers in whorls. Fields; common.

2.—**G. Ladanum.** (Red Hemp Nettle.) Stem and leaves downy, mottled crimson flowers; corolla notched. Common.

LAMIUM.

Calyx five-toothed, bell-shaped; corolla unequal,

lower lip two-cleft, with 1 or 2 teeth at the base 2 stamens longest.

1—**L. album.** Common white dead nettle.

2.—**L. purpureum.** Common purple dead nettle.

BETONICA.

Calyx five-toothed, egg-shaped; 10 ribs; tube of corolla unequal, larger than calyx, lower lip 3 unequal lobes, 2 stamens longest.

1.—**B. officinalis.** (Wood Betony.) Root leaves cordate, long stalks; interrupted spike; pink flowers, 6 in each whorl. Common in woods.

STACHYS.

Calyx tubular, five cleft; corolla unequal, larger than calyx; upper lip notched, lower lip three-lobed; 2 stamens longest.

1.—**S. sylvatica.** (Woundwort.) Leaves heart-shaped, serrated; flowers 6 in a whorl; deep red. Very common.

2.—**S. palustris** (Marsh Woundwort) is not uncommon.

NEPETA.

Calyx tubular, five-toothed; corolla unequal, larger than calyx; upper lip notched, lower one three-lobed; 2 front stamens shortest.

1.—**N. Cataria.** (Cat Mint.) Leaves downy, stalked; stem erect; flowers white, spotted with purple; aromatic; hedges. St. Lawrence.

2—**N. Glechoma.** (Ground Ivy.) The common trailing little plant with blue flowers common to every hedge.

CALAMINTHA.

Calyx two-cleft, thirteen-ribbed; swollen; corolla

unequal, upper lip three-cleft, lower one two-cleft; hairy.

1.—**C. officinalis.** (Calamint.) Leaves slightly serrated; flowers in forked axillary cymes; aromatic; pale purple. Dry roadsides.

2.—**C. Sylvestris.** Discovered by Dr. Bromfield as indigenous in the Island. Rowledge Farm. For ample descriptions *vide* Bromfield's "Flora Vectensis." Rare.

3.—**C. Clinopodium.** (Wild Basil.) Leaves egg-shaped, stalked; hairy; flowers 2—3 whorls; purple flowers, and pointed bracts. Not common. Landslip.

PRUNELLA.

Corolla two-lipped, unequal; calyx two-lipped; stamens two-forked.

1.—**P. vulgaris.** (Self-heal.) A very common little bluish-purple flower, with bracts beneath each whorl; leaves entire. Every pasture.

SCUTELLARIA.

Corolla two-lipped, upper one swollen; calyx two-lobed, shorter than corolla tube.

1.—**S. minor.** (Lesser Skull-cap.) 4—6 inches; egg-shaped leaves; crenated; pink, spotted inside. Bogs. Sandown Level; Rookley.

Order LIII.—**VERBENACEÆ.** *Vervain tribe.*

Calyx tubular, not falling off; corolla irregular; a long tube; stamens 4, 2 long, 2 short; ovary two or four-celled; style 1; stigma two-cleft; seeds 2—4, adhering.

VERBENA.

Calyx five-cleft; corolla five-cleft; stamens short.

1.—**V. officinalis.** (Vervain.) A slender, branched plant; leaves deeply cut and serrated; flower in spikes; lilac. Undercliff generally.

Order LIV.—PRIMULACEÆ. *Primrose tribe.*

Calyx 5, rarely four-cleft; corolla five-cleft; stamens 5; ovary one-celled; style 1; stigma swollen at head; capsule one-celled; seeds numerous; attached.

The Primulaceæ are an extensive order of corolliflorous plants, such as the primrose, oxlip, cowslip, the hybrid polyanthus, auriculas, the exquisite Alpine soldanella, and many others. The oxlip, uncommon, in most parts of England, is plentiful in the Isle of Wight, varying much in size and colour; its leaves are somewhat sinuated and contracted about the middle, more like the cowslip than the common primrose. The flowers are usually umbelled, although we find single ones often on the same plant with a cluster. In fact, it is possible to gather a series of twenty specimens of primrose, cowslip, and oxlip, in which the transition from one to the other is so gradual that few could say to which species each should be referred. It is undoubtedly a fact that all three species have been raised from the seed of a single plant, and often oxlips will come up in gardens, after a year or two, exactly like primroses. The three species may be distinct, but they are certainly liable to change their character. It should be stated that this is the experience obtained by five years' observation.

PRIMULA.

Calyx five-cleft; stamens 5; capsule with 10 teeth.

1.—**P. vulgaris.** (Common Primrose.) Woods and banks.

2.—**P. veris.** (Cowslip.) Flowers in clusters.

3.—**P. elatior.** (Oxlip.) Flowers in umbel; Rew Woods.

ANAGALLIS.

Calyx five-cleft; corolla wheel-shaped; stamens 5; hairy; capsule splitting all round.

1.—**A. arvensis.** The common scarlet pimpernel.

2.—**A. tenella.** (Bog Pimpernel.) Creeping; small leaves, opposite; flower-stalks long; flowers rose colour, twisted in bud. Bogs; Landslip; Niton.

LYSIMACHIA.

Calyx five-cleft; corolla wheel-shaped; stamens 5; not hairy; capsule opening by valves.

1.—**L. nummularia.** (Money-wort.) Leaves ovate; creeping; large yellow flowers. Common on banks.

2.—**L. nemorum.** (Yellow Pimpernel.) Small bright yellow flowers; creeping; leaves ovate, acute; sepals linear-lanceolate. Woods; common.

GLAUX.

No calyx; corolla bell-shaped, five-lobed; stamens 5; capsule five-valved; 5—10 seeds.

1.—**G. maritima.** (Sea Milkwort.) Creeping; leaves opposite; fleshy; flowers pink; axillary. St. Helen's Spit.

SAMOLUS.

Calyx five-cleft; not falling off; corolla salver-shaped; 5 scales at the mouth; stamens 5; capsule with 5 reflexed teeth.

1.—**S. Valerandi.** (Brookweed.) Stem succulent; leaves alternate; a bract below each flower; clustered; white. Common in moist places.

ORDER LV.—**PLUMBAGINACEÆ.** *Thrift tribe.*

Calyx tubular, plaited, chaffy, not falling off; corolla five-cleft; stamens 5; ovary 5 carpels; one-celled; styles 5; fruit one-seeded.

ARMERIA.

Flowers in terminal clusters; styles hairy.

1.—**A. maritima.** (Thrift.) Leaves linear, fleshy; flowers in pink heads. Sea cliffs; Ventnor. Common.

STATICE.

Flowers in panicles; styles smooth.

1.—**S. Limonium.** (Sea Lavender.) Leaves lanceolate, glaucus; purplish blue, scentless panicles. Brading Harbour.

ORDER LVI.—**PLANTAGINACEÆ.** *Plantain tribe.*

Calyx four-cleft; corolla 4, chaffy, not falling off; stamens alternate, with corolla segments, long and threadlike, anthers lightly attached; ovary two-celled, rarely 4; style 1; stigma hairy; capsule of 1—2 seeds, or numerous.

PLANTAGO.

Calyx segment bending back; corolla tubular, spreading lobes; stamens very long; capsule two or four-celled; leaves ribbed.

1.—**P. major.** (Greater Plantain.) Leaves broadly ovate; stem channelled; flowers in a spike, stem round; cells many-seeded; greenish flowers, with seeds much used for canaries. Common by roadside.

2.—**P. media.** (Hoary Plantain.) Leaves on flat stalks; flower spike round and close; cells one-seeded; leaves lie close pressed to the ground. Meadows.

3.—**P. lanceolata.** (Ribwort Plantain.) Leaves very narrow; flower spike short and angular; cells one-seeded; flowers dark brown. Very common in long grass.

4.—**P. maritima.** (Seaside Plantain.) Leaves linear, furrowed, fleshy and woolly at the base; readily known by the fleshy leaves. Sea-cliff and marshes; Brading.

5.—**P. Coronopus.** (Buck's-horn Plantain.) Leaves pinnatifid; capsule four-celled, four-seeded; prostrate. Between Sandown and Shanklin.

ORDER LVII.—**CHENOPODIACEÆ.** *Goosefoot tribe.*

Perianth five-lobed; stamens 5, rarely 1—2; superior; style 2—4, rarely simple; stigma uncleft; fruit one-seeded, sometimes fleshy; flowers small and inconspicuous, imperfect; some with pistils only, other stamens only.

The order Chenopodiaceæ are more useful than ornamental. Many of the genera such as Chenopodium, Salicornia, Salsola, yield quantities of alkali to the manufacturer, and are of considerable value on that account. The species described by Humboldt called quinoa, is a goosefoot, and the leaves, which resemble spinach, form a great article of food in Mexico and South America. Plants of this order abound on sandy shores, salt marshes, and such places.

CHENOPODIUM.

Perianth deeply five-cleft; stamens 5; stigma 2; leaves flat and shiny.

1.—**C. polyspermum.** (Many-seeded Goose Grass.) Spreading; leaves egg-shaped and sessile; flowers in

slender spike and leafy; seeds shining; 4 inches to 1 foot; stem and leaves have a reddish tinge. Not common. America Woods.

2.—**C. Bonus-Henricus.** (Good King Henry.) Leaves toothed and angular; flowers compound, in a leafless spike; dark green and succulent thick leaves. St. Lawrence.

3.—**C. album.** (White Goosefoot.) Leaves egg-shaped, but angular and toothed at the base. Upper ones entire; flowers in a dense spike; covered all over with a white powder; 1—3 feet high; abundant by roadsides. Several other species or varieties are named in Bromfield.

SUÆDA.

Perianth five-cleft, fleshy; stamens 5; stigma 2—3.

1.—**S. maritima.** (Annual Sea-blite.) Leaves fleshy and cylindrical; greenish flowers, small. Muddy sea-shores; common.

ATRIPLEX.

Stamens and pistils generally on separate plants; barren flower has calyx five-cleft, 5 stamens; fertile flower has calyx two-valved, stigmas 2, fruit one-seeded.

1.—**A. laciniata.** (Frosted Sea-Orache.) Stem spreading; leaves wavy at the edges, angular, toothed, mealy beneath. St. Helen's; Ventnor Cove.

Several other species given in the "Island Flora," but chiefly from the Cowes and Ryde districts.

BETA.

Perianth five-cleft; stamens 5; stigmas 2; fruit one-seeded.

1.—**B. maritima.** (Sea Beet.) A tall succulent plant with fleshy, glossy leaves, and spike of greenish flowers, 1 or 2 together, with a leaflet. St. Lawrence, on the upper ledge of cliff.

SALSOLA.

Perianth five-cleft; stamens 5; stigmas 2; fruit one-seeded, crowned; leaves cylindrical.

1.—**S. Kali.** (Prickly Saltwort.) Prostrate, branched stem; succulent leaves, terminating in a sharp prickle; flowers solitary, with 3 bracts at the base. Plentiful on St. Helen's Spit.

SALICORNIA.

Perianth undivided, fleshy; stamens 1—2; style short; stigma two-cleft; stem jointed; no leaves.

1.—**S. herbacea.** (Jointed Glasswort.) 4—8 inches high; easily recognized by its fleshy joints fitting into each other; flowers inconspicuous. St. Helen's Spit.

2.—**S. radicans.** Has prostrate-rooting stems.

Order LVIII.—SCLERANTHACEÆ. *Knawel tribe.*

Perianth tubular, four or five-cleft; stamens 5—10, inserted into the tube; ovary 1, superior, one-celled; styles 2 or 1, notched; fruit enclosed.

SCLERANTHUS.

Calyx contracted, petals 3; stamens 10, rarely 5; styles 2.

1.—**S. annuus.** (Annual Knawel.) A small plant, 2—4 inches high; green flowers; stem forked. Common.

ORDER LIX.—**POLYGONACEÆ.** *Persicaria tribe.*

Perianth three or six-cleft, often in 2 rows; flowers often bearing pistils, or stamens only; stamens 5—8, attached to perianth; styles 2 or 3; fruit an angular nut.

POLYGONUM.

Styles 3; fruit triangular.

1.—**P. aviculare.** (Common Knot Grass.) Stem branched; leaves narrow; flowers axillary, flesh-coloured. Very common.

2.—**P. Convolvulus.** (Climbing Persicaria.) Stem clinging; leaves somewhat heart-shaped; fruit rough; axillary flowers in a spike, 4 together; greenish-white. Everywhere.

3.—**P. amphibium.** (Amphibious Persicaria.) Erect; leaves floating in water; flowers in short spike; stamens 5; leaves oblong; pink; fruit flattened. Ditches; common.

4.—**P. persicaria.** (Spotted Persicaria.) Stem erect and branched; flowers in spikes; stamens 6; stipules fringed; 1—2 feet high; large spotted leaves; pinkish flowers; fruit flattened. In moist ground; common.

5.—**P. Hydropiper.** (Biting Persicaria.) Erect; flowers in a loose, drooping spike; stamens 6; greenish. Common.

Other species are occasionally found.

RUMEX.

Perianth six-cleft, in two rows; stamens 6; styles 3; fruit an angular nut, covered by the perianth.

1.—**R. Hydrolapathum.** (Great Water Dock.) Leaves narrow, tapering, the lower ones heart-shaped,

very large; flowers greenish, in loose spikes; 4—6 feet high. By streams; Sandown Level.

2.—**R. sanguineus.** (Blood-red Veined Dock) Has leaves deeply veined with crimson. Abundant.

Several other species, with stamens and pistils on the same plants as above.

3.—**R. Acetosa.** (Common Sorrel.) Well known by the acid flavour of its leaves. Reddish-green flowers; stamens and pistils on different plants.

4.—**R. Acetosella.** (Sheep's Sorrel.) Smaller than the last, often tinged red. Dry pastures; abundant.

ORDER LX.—**SANTALACEÆ.** *Sandal Wood tribe.*

Perianth four or five-cleft; stamens opposite the lobes; ovary one-celled; style 1; stigma lobed; fruit a hard drupe.

THESIUM.

1.—**T. linophyllum.** (Bastard Toad Flax.) Stem prostrate; narrow, pointed leaves; clusters of whitish flowers. Cliffs and downs, Ventnor.

ORDER LXI.—**EUPHORBIACEÆ.** *Spurge tribe.*

Perianth lobed, with scales; stamens and pistils on separate flowers; stamens varying in number; ovary, style, and stigma 3 (mostly); fruit three-celled, three-seeded. A very large and important order.

The Euphorbiaceæ constitute a very large order of plants, more peculiar to Africa than Europe, though 125 species are grown in England. They are remarkable for a poisonous fluid in the stem, which is milky. The poisoned arrows used by the natives of Polynesia are prepared with a species of Euphorbiæ. The well-known ipecacuanha is obtained from a foreign species.

As a rule, boiling the plant does away with all dangerous properties. This is the case with the cassava, poisonous if uncooked, but much used as food after the application of heat. Croton tinctorium also belongs to this order. E. Portlandica and E. Paralias are the two rare species found in the Isle of Wight, at Culver Cliff and St. Helen's Spit respectively.

EUPHORBIA.

Perianth bell-shaped; 12 or more barren flowers, and 1 fertile one; stigma two-cleft.

1.—**E. amygdaloides.** (Wood Spurge.) Perianth tipped with glands; stem branched in about 5 rays; each ray two-forked; bracts perfoliate; leaves narrow, hairy beneath; 1—2 feet high; golden-green leaves and flowers. Common in woods.

2.—**E. Peplus.** (Petty Spurge.) A weed in gardens 3—4 inches high; pale coloured; three-rayed and forked, with numerous flowers, which are crescent-shaped and pointed.

3.—**E. Paralias.** (Sea Spurge.) A stout shrubby plant, in masses among sand; leaves imbricated and glaucous. Introduced at St. Helen's Spit by the late Dr. Bromfield in 1848.

4.—**E. Portlandica.** (Portland Spurge.) Growing among chalk *débris* at Culver Point plentifully; not so stout as the last; stem tinged with red, also the leaves.

5.—**E. Lathyris.** (Caper Spurge.) A tall species 2—4 feet high; glaucous leaves, and heart-shaped bracts, and large capsules. Near gardens at St. Lawrence. Perhaps not truly wild.

6.—**E. Helioscopia.** (Sun Spurge.) Umbel of 5

rays; separately forked; leaves oblong, and partially serrated; golden green. A common weed; also in cultivated ground.

7.—**E. platyphylla.** (Water Spurge.) Leaves hairy beneath, smaller than the last; capsules warty. Brading.

8.—**E. Peplis.** (Purple Spurge.) Peculiar to sandy shores; grows flat, and sends out branches at right angles to the root; the whole plant a purple hue. St. Helen's Spit.

The last three species have not a pointed perianth.

MERCURIALIS.

Perianth three-cleft; stamens and pistils on different plants; barren flower, with 9 stamens, or more; fertile flower, 2 styles; ovary two-lobed; capsule two-celled, two-seeded.

1.—**M. perennis.** (Dog Mercury.) Perennial; stem simple; leaves rough; an early spring plant, with small greenish flowers; barren ones stalked, fertile ones sessile. Abundant in every wood.

ORDER LXII.—**URTICACEÆ.** *Nettle tribe.*

Perianth divided, sometimes wanting; stamens and pistils on different flowers; stamens equal to the lobes, and opposite to them; ovary 1, simple; fruit a dry capsule.

The Hop is the most important genus of the Urticaceæ, or nettle order. The name hop is of Saxon origin, from "hoppan—to climb." The plant cultivated for brewing purposes is identical with the wild species. It is remarkable for bearing two sorts of flowers, the male growing in clusters not unlike a

currant, and the female a cone or catkin of membranaceous scales, from which the beer hop is obtained. In the reign of Henry VIII. there were regulations to prevent brewers putting hops into beer, as it was thought unwholesome; and in the reign of Henry IV. it was petitioned against as "a wicked weed," not from teetotal principles, but on the supposition that it spoilt the beer.

In "Baker's Chronicles" the following distich is written:—

> "Turkies, carps, hoppes, piccarell, and beere,
> Came into Englande all in one yeare."

This refers to beer brewed with hops, for with malt it was brewed before 1524.

Other plants have the peculiar bitter flavour besides hops, but none can be successfully used where the hop is obtainable. Thus Heath, the Bog-bean, a gentian, Ground Ivy, and others have all been tried, but have in every case proved of inferior quality. A Kentish hop-garden, in point of beauty, is far above the vineyard; indeed there are few more picturesque bits of landscape than a hop-garden, with all the wealth and luxuriant growth of the hop-vines.

URTICA.

The common Sting Nettles, too well known to need further description.

PARIETARIA.

Stamens and pistils in the same flower; perianth four-cleft; stamens 4; fruit one-seeded.

1.—**P. officinalis.** (Pellitory-of-the-wall.) Branched, with hairy, narrow leaves, reddish stem, and axillary clusters of inconspicuous flowers. Chalk cliffs.

HUMULUS.

Stamens and pistils on different flowers; perianth of five leaves in barren flower, stamens 5; fertile flower a catkin with curved scales, one-seeded and 2 styles.

1.—**H. Lupulus.** (Hop.) One of our most beautiful wild creepers, clinging to hedgerows, identical with the cultivated hop of Kent. Undercliff; common.

Order LXIII.—**ULMACEÆ.** *Elm tribe.*

ULMUS.

Perianth four to five-cleft; stamens 5; styles 2.

1.—**U. suberosa.** (Cork-barked Elm.) Common in hedgerows.

2.—**U. montana.** (Wych Elm). Frequent.

3.—**U. glabra.** (Smooth-leaved Wych Elm.) Uncommon.

Order LXIV.—**AMENTACEÆ.** *Catkin-bearing tribe.*

SALIX.

Stamens and pistils on different plants; stamens 1 to 20 inserted on the scales.

S. alba. (Common White Willow.) By streams, and several other varieties.

POPULUS.

Stamens 8 to 30; stigma 4 to 8; catkins jagged.

P. tremula. (Aspen.) Common.

BETULA.

Stamens 10 to 12; catkin three-flowered; fruit flattened.

B. alba. (Common Birch.) Not uncommon.

ALNUS.

Stamens 4; fertile catkin two-flowered.

A. glutinosa. (Common Alder.) Damp ground.

MYRICA.

Stamens 4 to 8; stigma 2; one-seeded.

M. gale. (Sweet Gale.) Uncommon. Rookley Wilderness.

CORYLUS.

Flowers in long catkins; stamens 8; stigma 2.

C. Avellana. (Hazel.) Hedgerows.

QUERCUS.

Stamens 5 to 10; stigma 3; fruit an acorn.

Q. Robur. (Oak.) Common.

FAGUS.

Stamens 5 to 15; stigma 3; three-cornered nuts.

F. sylvatica. (Beech.) Hill-sides. Not uncommon.

Order LXV.—ORCHIDACEÆ.

Perianth (calyx and corolla) of six segments in two rows, mostly coloured; one, the lowest, usually differing in form from the rest, and often spurred; stamens 3, united with the style in a central column; capsule (rarely a berry) three-valved; seeds numerous.

The Orchis may be considered as the type of the natural order Orchideæ, or Orchidaceæ. This order is very large, comprising many of the most wonderful, grotesque, and beautiful and fragrant plants in the world. In the structure of their flowers they have, in many instances, a striking resemblance to the heads or bodies or general shape of insects, birds, and other

animals. About 3000 species have been described. They are found in all parts of the world except the very coldest and the most arid regions, but are most numerous in the humid forests of the torrid zone, particularly in America. There the far larger portion of the order are epiphytes, adhering by means of long twisting fleshy roots to the branches of trees and to the sides of rocks and boulders; but deriving only mechanical support from the objects to which they attach themselves, and drawing their nourishment from atmospheric gases. Not more than thirty-eight species of orchidaceæ are mentioned in the British Flora, and eighteen or nineteen of these are found in the Isle of Wight. They are amongst the greatest ornaments of our downs and pastures; some of them, such as the Ophrys apifera (Bee Orchis), Ophrys muscifera (Fly Orchis), Ophrys aranifera (Spider Orchis), curiously resembling the insects after which they are named. None of the genus are of any importance in medicine. Galep is obtained from the root tubercles of some species, especially from the Orchis mascida; and the delicate flavouring perfume vanilla is the product of an orchid growing in Mexico and Brazil. The Angræcum fragrans, an orchid growing in India, is much prized for the delightful fragrance of its leaves, resembling that of the Tonka-bean.

ORCHIS.

1.—**O. Morio.** (Green-winged Meadow Orchis.) Spike lax, lateral sepals obtuse; spur shorter than germen; outer sepals forming a sort of helmet over flower; lip purple, pale in the middle, with purple spots. Meadows and pastures abundant. May and June.

2.—**O. mascula.** (Early Purple Orchis.) Leaves spotted, spike lax; lateral sepals acute, reflexed upwards; spur obtuse, as long as germen; flowers pinkish purple, rarely pure white. Abundant in moist woods and damp places. Rew copses, Appuldurcombe; Landslip. May and June.

3.—**O. ustulata.** (Dwarf dark-winged Orchis.) Spike dense; segments of lip deep, linear, lower one without a point in notch; stem 4 to 5 inches high; lip white, spotted; rest of flower dark purple. On dry hilly downs. St. Boniface and Rew downs; Rifle Valley. May and June.

4.—**O. maculata.** (Spotted Palmate Orchis.) Lip deeply three-lobed, flat; leaves spotted; stem solid; bracts shorter than ovary; colour varying from rosy purple to nearly pure white; flower spikes often 7 inches long. Dry heaths, woods, and in moist or boggy places abundant. On a dry soil the flowers are much smaller.

5.—**O. latifolia.** (Marsh Palmate Orchis.) Lip indistinctly three-lobed; its sides reflexed; stem hollow; bracts longer than ovary; leaves closely sheathing, sometimes very large, plain, or more rarely spotted with brown; flowers various shades of rose-red, crimson, or purple, rarely white. Common in low moist or boggy places. The Wilderness; Landslip; Sandown Marshes. June and July.

6.—**O. pyramidalis.** (Pyramidal Orchis.) Spike dense, sepals spread; lip with 3 equal lobes; spur longer than germen; leaves very acuminate (taper); flowers of a delicate rose-purple, spirally arranged in a close ovate spike. Generally abundant on the grassy slopes of the Ventnor downs. June and July.

GYMNADENIA CONOPSEA *(P III.)*

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7.—**O. conopsea.** (Fragrant Gymnadenia.) Spike dense; flowers somewhat paler than O. pyramidalis; stem furrowed, and purplish above; lip three-lobed, not spotted; spur twice as long as the germen. The delicate fragrance of this beautiful flower will at once distinguish it. On dry hilly pastures. Rifle Valley, Ventnor. June and July.

HABENARIA.

1.—**H. viridis.** (Frog Orchis.) Flowers green; spur short; lip linear, bifid, greenish brown. In damp pastures; very rare with us. June and July.

2.—**H. chlorantha.** (Great Butterfly Orchis.) Lip lanceolate, entire, obtuse; spur twice as long as the germen. Stem 10—15 inches high; radical leaves mostly 2, shorter than stem; obovate in shape; sepals creamy-white; very fragrant, especially in the evening. In thickets and on grassy slopes. Rew copses, Rew downs. May and June.

3.—**H. bifolia.** (Lesser Butterfly Orchis.) Radical leaves usually 2; oblong-obovate, and attenuate at base; spur very slender; flowers greener than H. chlorantha. On open heathy places; not common. June and July.

OPHRYS. *Insect Orchis.*

The flowers of all these species are particularly beautiful and curious, and more or less aptly resemble certain insects.

1.—**O. apifera.** (Bee Orchis.) Petals downy, linear; sepals pink inside; lip tumid; four-lobed, not longer than sepal, with an intermediate, acute, reflexed appendage in notch; anther elongated with a hooked point; flowers large, *outer* sepals purplish or

greenish; lip velvety or silky, rich brown, variegated with yellow. On chalky downs; dry meadows; very frequent. The Rifle Valley, Ventnor; Rew and Week downs. June and July.

2.—**O. aranifera.** (Spider Orchis.) Petals glabrous, linear; sepals yellowish-green inside; lip tumid, four-lobed, without an appendage; lip snuff-colour. On chalky pastures; very rare now with us. April and May.

3.—**O. muscifera.** (Fly Orchis.) Petals filiform, slender like a thread; sepals yellowish-green; lip oblong, three-lobed, middle lobe bifid. The whole flower bears a strong resemblance to a fly, with a spot of bluish-white on its wing. Slender lateral *inner sepals* resembling the antennæ of an insect. Chalky pastures; woods and grassy banks, sometimes rather plentiful; Rew copses. May.

SPIRANTHES.

S. autumnalis. (Fragrant Lady's Tresses.) Radical leaves in a radical rosette; flower-spike twisted; lip oblong; flowers greenish white, fragrant. Very plentiful in the Landslip. August to September.

LISTERA.

L. ovata. (Tway-blade.) Stem tall, hairy above, with only 2 ovate-elliptical opposite leaves; stem sometimes 20 inches high; flowers small, green, in a loose spike; the tip paler. Very common in moist woods; Landslip; Rew copses; Appuldurcombe; Luccombe. May to July.

NEOTTIA.

N. nidus avis. (Bird's Nest.) Stem leafless, with brown scales; lip linear, oblong, with 2 spreading lobes; flowers of a dingy brown. Amongst dead leaves

EPIPACTIS PALUSTRIS *(P.113)*

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in woods and shady places; not common. Appuldurcombe; Cook's Castle; Rew copses. May and June.

EPIPACTIS.

1.—**E. latifolia.** (Broad-leaved Helleborine.) Leaves ovate: bracts mostly longer than flowers; lower lobe of lip acute, shorter than ovate sepals; upper lip broadly ovate; flowers greenish-purple, nodding in an upright spike; not common. In groves and moist places. Landslip; Luccombe.

2.—**E. palustris.** (Marsh Helleborine.) Leaves ovate; bracts mostly longer than flowers; lower lobe of lip acute, shorter than ovate sepals; flowers slightly drooping; outer sepals purplish-green, inner ones and lip white, with rose-coloured streaks at base; frequent. In boggy meadows and wet banks of slipped clay on the coast. Landslip, on sloping parts near the beach. June to August.

Order LXVI.—IRIDACEÆ.

Limb of the perianth six-cleft or six-partite; stamens 3, inserted into the base of the outer segments; anthers fixed by their base, opening outwards; ovary three-celled, many-seeded; style 1; stigmas 3, or 1 with 3 divisions; seeds round, hard; leaves equitant. Saffron is the principal economical product of this class.

IRIS.

1.—**I. pseud-acorus.** (Yellow or Water Flag.) Perianth six-cleft; stigmas 3; stem round; flowers yellow; leaves erect, pale green, with a glaucous cast. In shallow pools, ditches, wet meadows, and low, marshy places, abundantly. May to August.

2.—**I. fœtidissima.** (Stinking Iris.) Stem angled;

flowers smaller than the last, of a pale purple. In autumn and winter this plant is a conspicuous ornament of our woods and hedgerows. From the contrast of its dark evergreen leaves with the brilliant orange seeds, which remain for some time attached to the widely-spreading valves of the capsules. Plentiful all along the Undercliff, at Bonchurch, St. Lawrence, Steephill, &c.

Order LXVII.—AMARYLLIDACEÆ.

Limb of the perianth coloured, six-partite or six-cleft; stamens 6; anthers opening inwards; ovary inferior (situated *below* the corolla or calyx), three-celled; style 1; stigma three-lobed; fruit capsular; leaves fleshy, indistinctly nerved, all radical; roots bulbous.

GALANTHUS. *Snowdrop.*

Leaves glaucous, keeled; flowers white, solitary, drooping; seed with a whitish skin.

G. Nivalis. (Snowdrop.) On banks, in thickets and hedges in close lanes. February, March. About Brading; in a field close to Rew Farm; wood at Wroxall.

NARCISSUS.

Leaves flat; stem one-flowered; nectary campanulate, erect, crisped at the margin; obtusely six-cleft.

N. pseudo-Narcissus. (Daffodil.) In moist woods, copses and meadows, abundant. On the mound on which Godshill Church stands; in a small wood to the left of Redhill Lane, Wroxall; plentiful also at Brading. March and April.

Order LXVIII.—LILIACEÆ.

Stamens 6, inserted into the receptacle or on the

perianth; anthers bursting inwards; ovary superior, three-celled; style 1; stigmas 3 or 1; fruit dry; capsular.

The Liliacæ are almost without exception a bulbous family of plants of infinite variety and great beauty. Many of the finest have been introduced from Japan, and several are not uncommon in the Swiss Alps. The wild tulip and Star of Bethlehem are about the only representatives of the order in the Island, and both of very rare occurrence. With regard to the tulip, it has been noticed that the leaves only come up in some years, the yellow flower being hardly ever seen. It is in the neighbourhood of Brading, in dry pastures, that the tulip must be sought after.

TULIPA.

T. sylvestris. (Yellow Wild Tulip.) Leaves linear-lanceolate; flowers yellow, sub-erect, segment of perianth elliptical; lanceolate, bearded. In clay or limestone meadows; very rare.

ORNITHOGALUM.

O. umbellatum. (Star of Bethlehem.) Flowers erect, corymbose; peduncles longer than bracteas; whole plant quite smooth and glabrous; bulbs ovate; leaves radical, very weak, soon turning yellow at tips; flowers large, milk-white within, with a stripe of pale green on the back. In meadows and thickets, rare. April to June.

ALLIUM.

1. **A. vineale.**—(Crow Garlic.) Stem leafy below; leaves cylindrical slightly, channelled above; umbel globose, bearing numerous bulbs arising from a two-leaved spatha; flowers pure white. In meadows and

pastures, borders and fields; rarely flowering; not common; Steephill occasionally.

2.—**A. ursinum.** (Broad-leaved Garlic.) [Ransoms Gipsy Onion.] Leaves 2, rarely 3, ovate, lanceolate; stem bluntly triangular; umbel bursting from a white membranous spathe of 2 ovate, acute, many-ribbed deciduous leaves; flowers numerous, milk white. Notwithstanding the nauseous odour of the above plant, which is so strong as to scent the air where it grows, bees are attracted by the honied fluid at the base of the petals, and which is most likely free from the repulsive flavour of the herb itself.

SCILLA.

S. autumnalis. (Autumnal Squill.) Leaves narrow, linear, raceme lax; flowers few, pale blue, lilac, or whitish, scentless; seeds large, jet black, wrinkled. On dry sandy or gravelly pasture-ground, and on grassy spots amongst rocks. Not very common; plentiful on the sandy turf of St. Helen's spit. July to September.

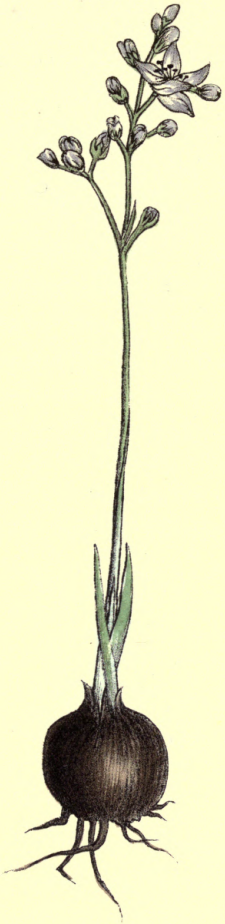
HYACINTHUS.

H. nutans, or non-scriptus. (Wild Hyacinth or Bluebell.) Leaves long, channelled; flowers blue, rarely white, drooping. In groves and copses; abundant. April to May.

Order LXIX.—DIOSCOREACEÆ. *Yam tribe.*

TAMUS.

T. communis. (Black Bryony, Our Lady's Seal.) A smooth glabrous vine, very common with us, and truly one of the most elegant of British plants, neglected because so common, but well worthy of general cultivation for the beauty of its bright green



SCILLA AUTUMNALIS *(P.116)*

L Reeve & Co London.

highly-varnished leaves, and graceful racemes of starry flowers, and clusters of pellucid scarlet berries in autumn. Stem annual, purplish below, solid, slightly angular and twisted, climbing over hedges and bushes often to a great length; leaves alternate, very various in size and form, but all modifications of heart-shape; flowers small, yellowish-green; berries in dense clusters, bright scarlet. May to July.

ORDER LXX.—**SIMILACEÆ.** *Asparagus tribe.*

ASPARAGUS.

1.—**A. officinalis.** (Common Asparagus. [Vulg. Speerage, Sparrowgrass.]) Stem herbaceous, much-branched, 2 feet high, leaves in small bundles of 5—12, weak and flexible; flowers drooping, yellowish-green, in pairs at the base or about the middle of each pedicel; very rare. On sandy or stony places by the sea-shore; Freshwater; sparingly on the shingly beach between Ryde and Binstead.

RUSCUS.

2.—**R. aculeatus.** (Butcher's Broom, Knee Holly, Shepherd's Myrtle.) Perianth spreading, 6 petals; stem branched, rigid; leaves ovate, acuminate, evergreen, with small white flower in centre of the upper surface; frequent. Ashey Down; Alverston Lynch. Flowers in spring and autumn.

ORDER LXXI.—**JUNCACEÆ.**

Calyx and Corolla 6 pieces; stamens 6, occasionally only 3; stigmas 3; style 1.

NARTHECIUM.

1.—**N. ossifragum.** (Lancashire Bog Asphodel.) Leaves rigid, ribbed, acute; flowers in a terminal erect

cluster 2—3 inches in length, bright yellow, with scarlet anthers; stamens erect, shorter than perianth, filaments thickly studded with long spreading bright yellow hairs. In spongy or peaty bogs, wet moors, and heaths; frequent. July and August. Munsley Moors, near Godshill; Munsley peat-bed; Alverston Lynch; bogs in the Wilderness; Lake Common.

ORDER LXXII.—**ALISMACEÆ.** *Water Plantain tribe.*

ALISMA.

A. ranunculoides. (Water Plantain.) Leaves all radical, linear-lanceolate; scape with simple branches; flowers solitary; petals cordate, rotundate, pellucidly veined, and yellow at base, white, sometimes with a purplish blush. Ditches and shallow pools; not common. May to September. Sandown Level; Alverstone; Godshill; Freshwater.

BUTOMUS.

B. umbellatus. (Flowering Rush, Water Gladiole.) Leaves linear-subulate; whole plant glabrous; stem erect, 2—4 feet high, tapering; nearly as thick as the little finger at bottom; flowers an inch across, expanding in long succession, peach-blossom colour, rosy-red at the back; stamens 9, germens 6, rose-coloured; very rare in this island. In ponds and ditches. Freshwater. June to August.

TRIGLOCHIN.

1.—**T. maritimum.** (Sea-side Arrow-grass.) Leaves radical, linear, fleshy; flowers green in lax simple spike; stamens 6, stigmas 3—6, sessile. Salt marshes along the Yar. May to September.

2.—**T. palustre.** (Marsh Arrow-grass.) Similar

but smaller; flower greenish, purple. Bembridge; Sandown Level.

Order LXXIII.—AVACEÆ.

An extensive genus of perennial herbaceous plants. Most are stemless, and of singular appearance; the roots of all are fleshy, hot, and acrid, yet in many instances are eatable. The common species, Arum maculatum, is a native of Great Britain; about thirty species have been introduced from North America, China, Japan, Ceylon, the South of Europe, the Levant, and the West Indies. About one-third are ornamental plants, the others being cultivated in their native country for food or medicine. The British species Arum maculatum grows wild in woods and shady banks in most parts of Great Britain. It is about a foot in height, with broad arrow-shaped leaves, spotted with purple or stained with white. The root is a whitish tuber, and is used for food and medicine. They are gathered in the spring, when they rapidly dry, shrink, lose all their acridity, and become farinaceous and fit for boiling or baking. In the Isle of Portland, where the plant is very common, the inhabitants manufacture them into a kind of British arrowroot, which is sent to London under the name of Portland sago. The French concoct a cosmetic from the dried roots, which they call Cypress powder. The roots, though assigned a place in the Materia Medica, are rarely used in regular medical practice. A provincial name for the plant is lords and ladies. The cocoa-root species, Arum esculentum, is extensively cultivated in Jamaica in the same manner as the potato, and its root resembles the Indian yam, but lasts for several years.

ARUM.

A. maculatum. (Common Wake Robin, or Cuckoo-pint; Lords and Ladies.) Leaves radical, large, shining, spotted with black; perianth *none;* flowers numerous, collected upon a spadix, which is enclosed in a one-leaved spatha; stamens indefinite. The extremity of the spadix is purplish; specimens occur with us occasionally in which the leaves are veined with a greenish white, as in the Arum italicum. Very common in woods and thickets, also hedge banks. Steephill; Bonchurch.

ORDER LXXIV.—**TYPHACEÆ.** *Reed Mace tribe.*

Flowers monœcious, numerous, and closely arranged upon a spadix *without* a spatha; perianth of 3 or more mere scales, or else wanting and replaced by hairs; barren flowers, stamens 1—6, anthers erect; fertile flowers, ovary solitary, superior, one-celled, containing 1 solitary pendulous ovule; style short; stigma simple, unilateral.

TYPHA.

1.—**T. latifolia.** (Great Reed-mace, or Cat's Tail.) Leaves very long, nearly an inch broad; stem 3—6 feet high; sterile and fertile spikes continuous; both cylindrical. Borders of ponds and lakes. July and August.

2.—**T. angustifolia.** (Lesser Reed-mace.) Leaves linear, grooved; sterile and fertile spikes a little distant from each other, both cylindrical. Alverstone; Luccombe, on the slipped land below the cliffs.

SPARGANIUM.

1.—**S. ramosum.** (Bur-reed.) Spadix spherical; barren flowers, stamens 3, anthers ovate, yellow; fertile flowers 3 or 4 dense globular heads below

the barren ones, alternate and distinct; leaves triangular at base, with concave sides; common flower; stalk *branched*. Sandown Level; in a pond at St. Helen's Spit. June to September.

2.—**S. simplex.** (Unbranched Bur-reed.) Leaves triangular at base, sides flat; common; flower-stalk simple, stigma linear, much smaller than last; flower-stalk bearing only a single head of fertile flowers; flowers pale yellow. Sandown Marshes; St. Helen's; Alverstone by Ash. July to October.

3.—**S. natans.** (Floating Bur-reed.) Stem simple; leaves floating, flat, concave at base, beautifully reticulated, very long and narrow; heads of *barren flowers* mostly solitary; heads of fertile flowers generally 2, the upper one sessile, the lower one on a short peduncle, each in the axil of an erect short leaf. Stream at Alverstone Mill; rivers Medina and Yar.

Order LXXV.—LEMNACEÆ.

Small floating plants with fibrous roots which propagate by offsets on the leaves.

LEMNA.

1.—**L. trisulca.** (Ivy-leaved Duckweed.) Fronds thin, pellucid, elliptic, lanceolate; caudate (tailed, having a long slender appendage) at one end, at the other serrated; roots solitary. Sandown Marshes; abundantly in ponds and ditches. June and July.

2.—**L. polyrhiza.** (Greater Duckweed.) Fronds broadly obovate; roots many-clustered. In clear still water; Yarbridge and Yaverland. Has not been seen to flower in Britain.

3.—**L. minor.** (Lesser Duckweed.) Root solitary; fronds obovate. Stagnant water, ponds, and ditches. July.

4.—**L. gibba.** (Gibbous Duckweed.) Fronds obovate, tumid below; root solitary; far rarer than the foregoing. Ponds and ditches. Yafford Farm, in a pond.

Order LXXVI.—NAIADACEÆ.

Flowers perfect, and all sessile, or imperfect and monœcious or diœcious; perianth single, of four-clawed scales, or wanting; ovaries solitary or several; one-celled; style simple, or more or less deeply two or three-cleft.

The following are submerged or floating aquatic plants, with very cellular leaves and stems; flowers inconspicuous, sometimes spiked:—

POTAMOGETON.

1.—**P. natans.** (Broad-leaved Pond-weed.) Lower leaves linear, or wanting; upper elliptical, coriaceous floating on long stalks, many-nerved, distinctly cellular; fruit large, keeled at the back; the submerged leaves are often wholly wanting, especially when the plant grows in shallow water. In ponds, ditches, and slow streams; frequent. June and July.

2.—**P. oblongus.** (Oblong-leaved Pond-weed.) Leaves all stalked, upper ones floating, oblong, elliptical, lower ones linear, lanceolate; spike slender, cylindrical, densely flowered upon a long peduncle. Wet ditches, bogs, marshy heaths; common. Blackpan and Lake Commons. July.

3.—**P. lucens.** (Shining Pond-weed.) Leaves stalked, elliptic-lanceolate, pellucid; stipules two-winged; spike cylindrical, many-flowered; upper leaves smaller than lower ones. Marsh-ditches, Sandown. June and July.

4.—**P. crispus.** (Curled Pond-weed.) Stem com-

pressed; leaves lanceolate, waved, serrated, three-nerved, sessile; fruit beaked. Slow streams; ditches. Bembridge; Sandown. Leaves alternate, all linear, submersed.

5.—**P. pusillus.** (Small Pond-weed.) Leaves narrow, linear, three or five-nerved, with obscure connecting veins; peduncles two or three times longer than spike; stem slightly compressed. Ditches and stagnant water Smallest of the species whole plant submerged, except the small flower-spike. Brading; St. Helen's. July.

6.—**P. pectinatus.** (Fennel-leaved Pond-weed.) Root perennial, originating from a tuberous lump, then creeping horizontally, slender, much branched; stem floating, copiously branched, the branches forked; leaves numerous, bright green, alternate, finely linear; spikes solitary, terminal on simple peduncles; flowers large, sessile, in pairs opposite to each other, or 3 together; anthers large, or 2 white lobes diverging below, bursting at the back.

7.—**P. densus.** (Close Opposite-leaved Pond weed.) Leaves crowded all opposite; spikes shortly-stalked, about four-flowered. In ditches and ponds. June and July. Sandown; Brading.

RUPPIA.

Flowers perfect, 2 on a spike arising from the sheathing bases of the leaves; perianth 0, stamens 4; style and stigma undivided.

R. maritima. (Tassel Pond-weed.) Ditches and pools of salt-water; very common. July to August.

ZANNICHELLIA.

Flowers monœcious; barren flowers, perianth 0,

stamen 1, anthers two or four-celled; fertile flowers, perianth single of 1 leaf; style undivided, stigma peltate.

Z. palustris. (Horned Pond-weed.) Stigmas rounded or broadly cordate, irregular in size and shape, but never lanceolate, attached to the style near their circumference; transparent, colourless, like thin laminæ of ice. Freshwater, in ditches; Brading Marshes. July.

ZOSTERA.

1.—**Z. marina.** (Grass-wrack.) Leaves linear, three or seven-nerved; peduncle of spatha thicker than spadix; anthers ovate; style bifid. Very common in shallow creeks of the sea.

2.—**Z. nana.** (Dwarf Grass-wrack.) Leaves one-nerved; spadix short, few-flowered, with marginal appendages. Similar places with the last.

ACOTYLEDONOUS[1] OR CELLULAR PLANTS.

In this class there are no real flowers, nothing that can be considered as stamen and pistil. This class corresponds with the Cryptogamia in the Linnæan system.

ORDER LXXVII.—**EQUISETACEÆ.**

Fructification terminal in spikes or catkins, consisting of scales, on the under-side of which are from four to seven involucres, which open longitudinally, and contain numerous globose bodies, enfolded by four filaments, clavate at their extremities.

The Equisetaceæ form a link between the ferns and grasses belonging to the most highly organized branch of Cryptogams. If these were rare exotics they

[1] That is, without a Cotyledon, i.e. the portion of a seed which in germination changes into two leaves.

would be considered of great beauty; being common weeds, they are overlooked. The height of different species varies from two inches to two yards; the stem and branches are leafless and regularly articulated. Their reproductive organs are in terminal spikes or heads, composed of several sided scales, producing on their under surface from four to seven involucres containing seed. The seeds are remarkable for a hygrometrical movement. Placed under a microscope, it will be seen that each seed has hair-like appendages, which give a certain movement to the seed which is uncanny to behold. There are a number of species indigenous in England.

EQUISETUM.

Fertile stems unbranched, succulent, appearing before the sterile ones, which have whorled branches.

1.—**E. Telmateia.** (Great Water Horse Tail.[2]) Sterile stems with numerous striæ (parallel longitudinal lines); branches erect, simple; fertile stems short, without branches, clothed with loose sheaths, having many two-ribbed teeth. Muddy lakes, moist boggy woods. Apse Heath; Parsonage Lynch, Newchurch; Lake Farm. April.

2.—**E. arvense.** (Corn Horse Tail.) Barren stem, with 10—15 striæ; branches spreading, teeth of sheaths blunt, pale brown, inflated, loosely clothing the stem. Abundant on clay soil, in corn-fields and on the landslips. March and April.

3.—**E. sylvaticum.** (Wood Horse Tail.) Stems with many whorls of compound branches; sheaths lax, with about 6—12 long obtuse teeth. Very uncommon

[2] So named from "equus," a horse, and "seta," a hair or bristle.

in the Island. Apse Withy Bed; Parsonage Lynch, Newchurch.

4.—**E. limosum.** (Smooth Horse Tail.) Stems smooth, striated, striæ 16—18; teeth of the sheaf short, rigid, distinct, branches nearly erect, simple-whorled; catkin terminal on the stem. In shallow or stagnant water; frequent. Sandown Level; Cothey-bottom Copse. June and July.

5.—**E. palustre.** (Marsh Horse Tail.) Stem with 4—10 deep furrows; sheaths loose; teeth wedge-shaped, acute, with membranous tips; branches simple-whorled, gradually shorter upwards. Less frequent than the last. Boggy places; Shanklin Chine; Alverstone. June and July.

Order LXXVIII.—POLYPODIACEÆ.

The Isle of Wight is not a great fern-hunting locality, such as Devonshire, Derbyshire, or Yorkshire, but we have still a few good species left. All botanists are very earnestly begged to exercise great care in gathering specimens. Osmunda regalis has become very rare in marshes where, fifteen years ago, it was common. The Moonwort is also becoming scarce, and there is danger of both species being exterminated, as the Asplenium marinum has already been at Niton. Asplenium adiantum nigrum is not uncommon along the Undercliff, but it is not an easy fern to transplant, therefore it might as well be left alone. Asplenium trichomanes was common in the Bonchurch Landslip, but hardly a root can now be found. The Marsh Fern (Lastrea thelypteris) is not uncommon at Rookley Wilderness, with several other species of Lastrea. The Blechnum, a hard fern, grows in Godshill Woods, not

attaining anything like the size of the same fern in the Lake District or in Yorkshire. The Adder's Tongue is sometimes plentiful on the grassy slopes above Luccombe Copses, but the sheep eat it off as fast as it grows. The Hart's Tongue is the characteristic fern of the Island, growing in great plenty and of great size. All the common species abound by the side of streams or in the woodlands.

CETERACH.

1.—**C. officinarum.** (Common Ceterach.) Fronds pinnatifid (cut into oblong segments), covered beneath with chaffy scales, segments obtuse, entire; fronds all fructiferous. Not common in the Island. On Brading Church; old wall at Bembridge; Carisbrook Castle.

POLYPODIUM.

2.—**P. vulgare.** (Common Polypody.) Fronds deeply pinnatifid; segments linear-lanceolate, obtuse, upper ones smaller. Plentiful everywhere on shady hedgerows and trunks of trees.

POLYSTICHUM.

3.—**P. Lonchitis.** (Prickly Shield Fern.) Sori (groups of seed-vessels) nearly circular.

4.—**P. lobatum.** (Closely-leaved Prickly Shield Fern.) Fronds narrow-lanceolate, bipinnate, attenuated at base; stipes more or less chaffy; fructification confined to the upper half of the frond. This species is closely allied to P. angulare, which last has broader fronds and very chaffy stipes.

LASTREA.

1.—**L. Thelypteris.** (Marsh Shield Fern.) Fronds pinnate; pinnæ linear-lanceolate, pinnatifid, pale green;

segments ovate, acute, entire; sori marginal. In boggy, marshy places; not common. Alverstone; abundant on the Wilderness and Rookley.

2.—**L. Oreopteris.** (Mountain Shield Fern.) Fronds pinnate; pinnæ lanceolate, pinnatified, glabrous; sori marginal. Very rare. Apse Castle; the Wilderness.

3.—**L. Filix-mas.** (Blunt Shield Fern.) Fronds bipinnate; sori near the central nerve; stipes and rachis chaffy. A beautiful though very common fern, 3—4 feet high, fronds growing in a circle. Shady woods; frequent.

4.—**L. spinulosa.** (Prickly-toothed Shield Fern.) Fronds linear-lanceolate, bipinnate; segments serrate; indusium persistent; stipes with broad, roundish scales. In damp hedge-bottoms. Frequent. Wilderness; Apse Castle.

5.—**L. dilatata.** (Broad Shield Fern.) Fronds ovate-lanceolate bipinnate; segments serrate; indusium with marginal stalked glands; stipes with long pointed scales, with a dark centre and diaphanous margin. In similar places with the last. Very plentiful in the Godshill Woods at the back of the Griffin Inn; America Woods.

ASPLENIUM.

Sori oblong or linear.

1.—**A. Adiantum nigrum.** (Black Maiden-hair Spleenwort.) Fronds triangular-lanceolate, bipinnate; pinnules cuneate (wedge-shaped), deeply serrated or toothed. Moist hedgerows, frequent. Godshill; Redhill Lane.

A. Trichomanes. (Common Wall Spleenwort.)

Fronds linear-pinnate, their stalk black; pinnæ roundish oblong, crenate; stipes and rachis black. Somewhat rare. Newchurch; Alverstone.

A. marinum. (Sea Spleenwort.) Fronds pinnate; pinnæ oblong-obtuse, serrate, the superior base rounded, the inferior one truncated. Sparingly on the rocks at Niton.

A. Ruta muraria. (Rue-leaved Spleenwort. Wall Rue.) Fronds bipinnate below; pinnæ cuneate, deeply serrated or toothed. Walls and fissures of rocks. Not common. Brading and Arreton Churches.

ATHYRIUM.

Sori oblong, reniform; indusium opening towards central nerve or midrib; margin free.

A. Filix fœmina. (Common Lady Fern.) Fronds broadly-lanceolate bipinnate; pinnules linear-oblong, acute, often drooping, inciso-serrate; sori oblong, at length arched at base; bright green fronds. Moist rocks and wet boggy places, frequent. One of the most beautiful of our native ferns. Blackpan Common; Wilderness; Shanklin Chine.

SCOLOPENDRIUM.

Sori linear, transverse, on lateral veins; veins forked; fronds simple, oblong-ligulate, acute, heart-shaped at the base; stipes scaly.

S. vulgare. (Hart's Tongue.) In moist, shady woods abundant. Very fine all through the Undercliff.

PTERIS.

Fronds tripartite; branches bipinnate; pinnates linear-lanceolate, superior undivided, inferior pinnatifid; segments oblong, obtuse; sori continuous, linear, marginal.

P. aquilina. (Brake.) On heaths and commons plentifully.

BLECHNUM.

Sori linear, longitudinal, parallel one on each side of the rib; *Sterile* fronds pectinate, pinnatifid; segments lanceolate, rather obtuse, fertile fronds pinnate; pinnæ linear acuminate.

B. boreale. (Hard Fern.) In damp woods; Apse Castle abundantly; the Wilderness; Godshill Moors.

ORDER LXXIX.—**OSMUNDACEÆ.**

OSMUNDA.

O. regalis. (Common Osmund Royal, King Fern.) Fronds bipinnate; pinnules oblong, nearly entire, the lower base somewhat auricled. In swampy places common. The Wilderness; Sainiam Wood.

This is the largest and most striking of our ferns, but it is of humble growth in the Isle of Wight, compared with the dimensions it attains elsewhere, particularly in the west of Britain and in Ireland, where it frequently grows to 10—12 feet high.

ORDER LXXX.—**OPHIOGLOSSACEÆ.**

BOTRYCHIUM.

1.—**B. Lunaria.** (Common Moonwort.) Capsules arranged on the margin of a contracted frond, sessile; involucre none; one-celled; two-valved; compressed; fronds lunate, or subflabelliform crenate. June. On dry, hilly pastures. Rare. The Landslip.

OPHIOGLOSSUM.

2.—**O. vulgatum.** (Adder's Tongue.) Capsules one-celled; two-valved; involucre none; spike cauline, club-shaped; frond ovate, obtuse. Moist meadows. The Landslip; Munwell. June.

FLORAL CALENDAR:

SHOWING SOME OF THE PRINCIPAL TREASURES WHICH ARE TO BE FOUND IN OUR WOODS AND HEDGES AND WHEN AND WHERE TO SEEK FOR THEM.

JANUARY.

When the winds whistle cold, and the sky is grey, and the air chilly, when, maybe, even in our own favoured isle, there is a suspicion of frost, with perhaps a slight fall of snow, it would seem to many that we did but jest to talk about a visit to the woods in January. "No one ever finds anything in the woods in winter!" is a common saying; to which we reply, "That is simply because no one takes the trouble to search the woods at that season of the year." And yet it is most true that in "God's Garden," as we once heard an old shepherd reverently call the home of wild flowers, there is no interregnum, no dreary period, when, in accordance with modern fashion, *our* flower-beds remain brown and bare for months together, until "bedding-out" time comes round. The woodlands are very bright and gay even in November and December. It is the fruit-harvest time of the woods, and leaves and berries of every hue meet the eye. The long graceful sprays of the wild rose toss their arms aloft, as if proud of their coralline hips—the crimson-leaved bramble trails over the hedgerows; the scarlet

berries of the holly contrast with the dark shining leaves. The rosy-pink capsules of the Spindle-tree, the rich chocolate berries of the Ivy, the dark sword-shaped leaves of the Iris fœtidissima, with its capsules of three twisted leathery valves, each bearing a row or more of bright orange-scarlet polished seeds; the transparent red berries of the Honeysuckle contrasting with the purplish black fruit of the Sloe, Privet, and Elder, the clear white pearls of the Mistletoe. Let no one say there is nothing to be found in the woods during winter! We have seen a winter bouquet culled from the Rew copses, the Pelham Woods, or the Landslip, which was worthy to grace the table of any drawing-room. And what of the mosses? 800 species of which have been discovered! It is in the winter and early spring that these tiny but most beautiful forms of vegetable life are to be found in full perfection—those yielding carpets that "steal all noises from the foot." In this month also may be found that exquisite little fungus, the Peziza coccinea. This charming addition to a winter nosegay may be successfully sought for in the Rew copses. It grows on pieces of decayed wood, generally under old hedges with a northern aspect, and resembles a fairy-like coral cup, peeping out, as it frequently does, from a bed of the brightest green fern moss. Of flowers, strictly speaking, there are still but few, although the daisy, "Companion of the Sun," may always be found, and the Winter Furze or Gorse brightens up the landscape in many places. In many a foreign northern land this (to us common) plant is cherished in greenhouses, and it is related of the great Swedish botanist that the first time he saw an English common bright with the

golden blossoms of the furze, he fell on his knees and thanked God for a sight so beautiful.

FEBRUARY.

Foremost amongst the flowers of February is the sweet-scented Butter-bur (Petasites fragrans), which, although originally a native of South Italy, is now quite naturalized in many parts of this Island. It grows plentifully on the wet ground sloping towards the sea between the old church at Bonchurch and the entrance to the Landslip. The delicate perfume of its early flowers make it a general favourite. Its blossoms appear before the leaves, on thick stems, and are of a pale flesh colour. The early blooming of this plant induces Swedish farmers to plant it near their bee-hives. The Snowdrop (Fair Maid of February) may now be looked for on banks amongst brushwood, and in groves and pastures, generally near houses. Snowdrops grow plentifully about Brading, and may also be found on the left-hand side hedge-bank of a field behind the pond at Rew Farm, near Ventnor.

MARCH.

"Daffodils
That come before the swallow dares, and take
The winds of March with beauty."

The name Daffodil seems to be a mere corruption of Asphodel. Daffodils, with their pale green leaves and large pale yellow flowers, are now in great profusion. The grassy mount on which the church at Godshill stands is literally clothed with them, and a small wood

to the left of Redhill Lane, Wroxall (popularly known as the Daffodil Wood), is a sight worth going far to see during this month. Luccombe Copse also abounds with daffodils. The Daffodils in the Isle of Wight bloom somewhat earlier than those in other parts of England, and many basketsful are annually sent off to the children's hospitals in London to gladden the hearts of the little sufferers there.

Now also the Pilewort, or Lesser Celandine, peeps out from every damp hedge-row, its "varnished golden flowers," immortalized by Wordsworth, seeming literally to bask in the sun. The pale green leaves of the Adoxa Moschatellina, with its strange little terminal head of five green flowers, four lateral and one horizontal, is found close by, and the earliest of the Orchidaceæ, Orchis Mascula (Early Purple Orchis), may often be gathered this month in sheltered copses. The leaves of this plant, elegantly spotted with purplish black, and its long spikes of rosy-purple blossoms, are a great ornament to our woods and pastures. It may generally be found in the small copses opposite the Recreation Ground. Primroses now become plentiful, and spangle over the woodlands, and the Scented Violet (viola odorata), varying in colour from claret, blue, dull red, to pink, and white, perfumes the sunny grassy banks upon which it loves to dwell. In the hedge-rows the snow-white blossoms of the common Sloe, the well-known Blackthorn (Prunus Spinosa), begin to open on the straggling leafless boughs, the leaves not appearing until after the flowers have departed.

APRIL.

"Nature never did betray
The heart that loved her."

So says the poet Wordsworth, whose long life was one long worship of Nature and of Nature's God. Let us listen to the silent voices of the flowers of the fields, it is very wise so to do.

"'Tis wise to let the touch of Nature thrill
Through the full heart; 'tis wise to take your fill
Of all she brings, and gently to give way
To what within your soul she seems to say."

In April a goodly array of wild flowers may be found in the Undercliff and its vicinity. The dark green shining arrow-shaped leaves of the Lords and Ladies, or Wake Robin (Arum Maculatum), are now starting up with the strangely-shaped flower called a spadix. It is like a tall column with a sharp point, which gradually opens and shows a singular blossom. Once seen it is not soon forgotten. All around the little waterfall opposite Steephill Castle the arum grows in wild profusion. In the Rew and Luccombe Copses, and in the beautiful Godshill Woods, the delicate blossoms of the Wood Anemone ("l'herbe au vent," as the French still call it), now carpet the ground. Lovely as it is, its flowers are highly poisonous, and cattle will not eat of it. The blossoms when bruised were formerly used for raising blisters on the skin. One of the prettiest woodland flowers, the Wood Sorrel (Oxalis acetosella) is now in full beauty in the Rew Copses. It has been called the sensitive plant of Britain, and with good reason, for

not only do the leaves drop at the approach of rain, or the evening dew, but it shrinks if roughly handled whilst gathering. Although so sensitive it has a hardy nature, and is plentiful in Norway, and even in Lapland. The Wild Hyacinth, or Bluebell, is also most luxuriant, in some places covering the woods with an azure carpet. "The Daffodil Wood" at Wroxall, the Landslip, and Luccombe Copse are covered with this popular "wilding of Nature." The golden blossoms of the Marsh Marigold (Caltha Palustris) may be found in damp meadows or woods; they are the "Winking Mary Buds" of Shakespeare. The Green-winged Meadow Orchis (Orchis Morio) grows abundantly in the meadows around Cook's Castle, and in a field at the side of the Home Farm in Godshill Park.

MAY.

"Now the bright morning star, day's harbinger,
Comes dancing from the east, and with her brings
The flowery May, who from her green lap throws"—

Such a company of joyful flowers that we can do little more than chronicle their names, and give the principal stations where they may be found.

Orchis ustulata. (Dwarf Dark-winged Orchis.) Plentifully on St. Boniface Downs.

Orchis latifolia. (Marsh Palmate Orchis.) Moist meadows, Appuldurcombe; Brading, low parts of Landslip.

Ophrys muscifera. (Fly Orchis.) In the Rew Copses, and on the grassy banks north of Rew Copses. Not easy to find, as it grows amongst tall grass.

Habenaria. (Butterfly Orchis.) Rew Copses, and the slope of the Downs, near the Copses.

Neottia nidus-avis. (Bird's Nest.) Rew Copses, Landslip, &c., usually amongst dead leaves. It almost looks like a spike of dried leaves.

Listera ovata. (Tway-blade.) Extremely common in every wood and copse.

Pulmonaria officinalis. (Lungwort.) In the Oak Woods at Brading. It is a somewhat rare plant with us.

Primula elatior. (Yellow Oxlip.) In Rew Copses. Its relative, the common Cowslip, is abundant everywhere.

Stellaria holostea. (Stitchwort.) This white star-like flower with its grass-like leaves is in every hedgerow.

Allium ursinum. (Broad-leaved Garlic.) Redhill Lane, Wroxall; Godshill Woods. The strong garlic-like odour of this plant has often painfully disenchanted the amateur botanist, who, misled by the beautiful umbel of white flowers, rejoiced in the thought that he had found the far rarer Star of Bethlehem.

JUNE.

"The Queen-month of flowers!"

Orchis maculata. (Spotted Palmate Orchis.) Abundantly in moist and boggy places. Very fine on the moors at Godshill, some of the flower spikes measuring five inches in length.

Orchis conopsea. (Gymnadenia.) Half way up the Rifle Valley, Ventnor; very plentiful. It

may be readily distinguished by its delicate fragrance. In the same spot may be found Ophrys apifera (Bee orchis), also common on other parts of the Downs, and Gentiana amarella (Gentian). A somewhat rare and singularly beautiful plant, Melampyrum arvense (Purple Cow-wheat, Poverty-weed), may now be gathered on a small triangular piece of grassy ground on the top of the Undercliff on the right-hand side *just past* the road descending into the Pelham Wood.

Now is also the time for visiting St. Helen's Spit, where many of the rarest of our trefoils will be found; also Eryngium maritimum (Sea holly), Frankenia (Sea Heath), Œnothera (Evening Primrose), Convolvulus soldanella (Sea-side Bindweed), the Scilla autumnalis and many other treasures. The Myosotis palustris the true Forget-me-not, grows plentifully in a stream which runs through a meadow parallel with Redhill Lane, Wroxall, and ends at French Mill. The Armeria (Sea Pink) flowers abundantly all along the top of the cliffs, from Ventnor to Blackgang. The Samphire may be gathered on the rocks at Steephill Cove, and in the same place, but higher up, almost out of reach, flowers the Matthiola (Shrubby Stock).

JULY.

Many of the plants mentioned in last month are still in flower. In addition to them may now be found the Anagallis tenella (Bog Pimpernel). This elegant little plant with its pale rose-coloured petals is abundant on Lake Common, and also at the Wilderness, and

Apse Heath. The Cross-leaved Heath may generally be met with in close vicinity. On Sandown Level that strange plant, the Drosera rotundifolia the "Vegetable Spider," as it has been aptly called, grows very plentifully; also Prunella (Self-heal). The Statice limonium (Sea Lavender) is abundant about Brading Harbour.

AUGUST.

Orchis pyramidalis. (Pyramidal Orchis.) On St. Boniface and St. Catherine's Downs; also in the Landslip, and moist chalky meadows.

Epipactis palustris. (Marsh Helleborine.) On the wet bank of slipped clay in the Landslip near the sea.

Lathyrus sylvestris. (Everlasting Pea.) Plentifully in the Landslip.

Lysimachia vulgaris. (Great Yellow Loosestrife.) Sandown Level; Alverstone Lynch.

Cotyledon umbellicus. (Wall Pennywort, Navelwort.) Plentifully on hedgebanks along the cross-road from Bohemia to Kennerly Heath.

Androscœmum officinale. (Tutsan, Park-leaves.) The Wilderness; plantations at the back of the Griffin Inn, Godshill.

Spiranthes autumnalis. (Fragrant Lady's Tresses.) Landslip; St. Helen's; Sandown. Very abundant some years.

With the month of August the reign of summer may be said to end, although in fine seasons many of the above-mentioned plants may still be found in September. Then comes the time of seeds and berries, carry-

ing us cheerfully through what would otherwise be a bare and desolate time. But there is no such period in nature. From early spring-time, with young life everywhere, to the "miracle of blossoming summer," when every twig and spray bursts forth into blushing beauty, on to the rich mellow tints of autumn, "all are but parts of one stupendous whole," all are but pages of that mighty book, whose blessed mission it is—

"Through all the years of this our life, to lead
From joy to joy—for she can so inform
The mind that is within us, so impress
With quietness and beauty, and so feed
With lofty thoughts, that neither evil tongues,
Rash judgments, nor the sneers of selfish men,
Nor greetings where no kindness is, nor all
The dreary intercourse of daily life
Shall e'er prevail against us, or disturb
Our cheerful faith that *all that we behold*
Is full of blessings."

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